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DEFENSE INTELLIGENCE AGENCY

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(C) CHINESE COMMUNIST MILITARY LOGISTICS AND CAPABILITIES

TAB F- CHINESE COMMUNIST LOGISTIC CAPABILITIES ON THE SINO-SOVIET NORTHEAST FRONTIER

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The conclusions presented in this tab should not be accepted as a DIA estimate of Communist China's potential for waging war against peripheral nations. This basic intelligence document is a capability study; it does not assess the political implications of a decision to greater militancy, economic limitations to supporting a war effort, and current Chinese strategic and tactical doctrine.

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CHINESE COMMUNIST LOGISTIC CAPABILITIES ON THE NE SINO-SOVIET FRONTIER

I. STATEMENT OF THE PROBLEM

To determine the maximum forces which the Chinese Communists can logistically support on the Northeast Sino-Soviet Frontier.

II. SUMMARY OF STUDY AND CONCLUSIONS

A. Ground Capabilities

The Chinese Communists can logistically support, throughout the year, at the border crossing points along the Northeast Sino-Soviet border, a force of 8 armies (3 infantry divisions each), 14 separate infantry divisions, 2 armored divisions, and 4 cavalry divisions, totalling some 650,000 combat and combat support troops*. In addition, a reserve force of 27 armies can be logistically supported in concentration areas within approximately 100 miles of the border. The supportable force exceeds the available combat units in the current Combined Order of Battle and total some 2 million combat and combat support troops.

The above forces can be supported during the summer (wet) seasons; capability to sustain forces increases slightly during the spring season and increases sharply during the winter season when roads are frozen and can support heavier tonnages.

Within Northeast China, the rail net is well developed and provides good but vulnerable capability to distribute supplies to points near the Sino-Soviet border. Eight forward depot areas within 100 miles of the border can receive 33,500 STPD (98% by rail) during the summer wet season and 49,000 STPD (85% by rail) during the winter season.

Identified measurable military covered storage facilities in Manchuria

* Based on 100% T&E

have a capacity of over 500,000 tons of ammunition, and about 500,000 tons of general supply. POL facilities in the area, both military and civilian have a total capacity of over 500,000 metic tons.

B. Air

The Chinese could deploy their entire air force and naval air force into airfields that would place them within range of Vladivostok and the eastern Sino-Soviet border area. These aircraft could fly about 2,550 sorties per day (2240 air defense or jet fighter ground support and 310 piston and light jet bomber ground support). After 90 days the sortie rate would drop by about 50% due to necessary aircraft maintenance and other logistic problems. The Chinese could also utilize their 2 TU-16 (BADGER) and 15 TU-4 (BULL) medium bombers against Vladivostok and other targets; however, strong Soviet air defense around Vladivostok would probably cause heavy Chinese losses.

C. Intelligence Gaps (See Appendix D)

The reliability of intelligence used in this study varies from good to poor. Our knowledge of the location and estimated capacities of logistical installations has improved considerably, but we are still weak on actual stock levels and types of goods stored because of the limitations of available photography. Communications intelligence in the Shen-yang and Peiping areas of China is good, and we therefore have good information on the general location of combat divisions. However, knowledge of specific locations of Chinese ground force troop units as compared with South China is poor and a large amount of aerial photography awaits exploitation. As a result of the recently completed detailed study of the organization and equipment structure of the CCA, we have a fairly high degree of confidence in our knowledge of the TO&E of the CCA Infantry

Division. Our knowledge of actual strength levels is only fair, and our knowledge of armored and airborne divisions as regards both location and TO&E is poor. Our holdings on airfields in the area are good, but our knowledge of air logistics is poor; however, continued exploitation of available information on air logistical installations has improved our knowledge from other areas previously analyzed. We are fairly confident of naval order of battle, but we remain weak on troop and supply sealift factors and actual naval capabilities in general.

III. FACTS BEARING ON THE PROBLEM

1. The capabilities given in this study are based on the logistic ability of the Chinese to support a massing of forces on the NE Sino-Soviet frontier by the use of existing supply lines and depots in Northeast China. Maximum Chinese Communist sustained capability is presented in this study, but targets in NE China have been selected which would reduce this capability if interdicted.

2. All available information on supplies and transportation facilities has been used to determine logistic capability, but significant intelligence gaps limit to some degree the reliability of this study.

3. "Optimum"* and "minimum"** road capacities adjusted for climatic conditions have been indicated and used throughout the study area. Reductions have been made where appropriate for POL consumed enroute.

4. This study will require periodic revision because usable photography does not cover the entire area, and detailed interpretation and analysis of existing photography of military facilities is incomplete.

5. Tonnages are expressed in short tons (S. T.) unless otherwise noted.

6. Since deployment to the frontier area would indicate Chinese determination to use forces in combat if necessary, unit consumption rates

*"Optimum" road capacities are those calculated from the agreed US [redacted] 25X1C road methodology for normal usage in fair weather over a long period. For detailed explanation, see Annex 7 of this study, bound separately.

**"Minimum" road capacities are calculated from the methodology using figures for wet base and sub-base.

have been ba[redacted]t rate of expenditure.

7. Chinese Communist unit strength is based on 100% TO&E.

8. The soils found in the North China areas under consideration are gravelly silt, sandy clay, silt, gravelly silty sand, or gravelly clay. There exists in the area sufficient moisture to permit freezing of the soil. In addition the freezing temperatures tend to cause capillary action in the soil thus drawing moisture to the surface. These soils when frozen to a depth of 6 inches or more will become firm, support heavy traffic and require less maintenance. The gravel usually used for road surface would contain some binder of clay or silt which would tend to improve the surface quality of the road when frozen. In the frozen state there would exist minimal dust conditions; therefore, the distance between vehicles could be decreased to 300 feet; speed could be increased to 25 miles per hour. In general the capability of the earth and gravel roads, when frozen, would be equal to that of a bituminous surface treated road with the same general characteristics of surface width, shoulder width, alignment and condition. This improved capability of the road would be reduced to minimum capability for the bituminous surface treated road for an estimated 25% of the time due to loss of vehicle traction and reduction in speed because of hazardous conditions. (See overleaf for example)

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EXAMPLE OF EFFECTS OF FREEZING:

To determine the capability of a gravel road in good condition, 21 feet wide, with shoulders 0-2 feet, and mountainous alignment during the period October through mid-April. The road defined would normally have a maximum/minimum capability of 1100/350 Short Tons per day. (A bituminous surface treated road with the same characteristics would have a maximum/minimum capability of 3200/1400 Short Tons per day.)

The area through which the road passes receives 3-4 inches of precipitation in the month of September and 1/2 inch per month during the period October through mid-April. The ground in this area would be in a freeze-thaw condition during the month of November and frozen to a depth greater than 6 inches during the months of December through February; then thaw in the month of March.

The following would be the calculation of the capability of the gravel road for the period October through mid April.

CAPABILITY	NUMBER OF DAYS IN MONTH OF							Total Days	Days Times Capability
	Oct	Nov	Dec	Jan	Feb	Mar	Apr		
Road Capacity									
(Maximum) 1100	8*					8	15	31	34,100
(Minimum) 350	22*					22		44	15,400
(Maximum) 3200		22	22	22	22			88	281,600
(Minimum) 1400		8	8	8	8			32	44,800
						TOTALS		195	375,900

CAPABILITY $\frac{375,900}{195}$ or 1928 Short Tons Per Day

The state of the ground varies widely in the area of consideration and each road segment has been considered individually in determining the number of days it would be in the freeze/thaw state. Valley roads generally do not have an increased capability during the winter months.

* Indicates that for eight days of October weather conditions will allow the maximum tonnage of 1100 STPD over the road, but that for 22 days weather conditions (loss of vehicle traction and reduction in speed because of hazardous conditions), will allow the minimum of only 350 STPD over the road.

IV. ASSUMPTIONS

1. Increased Chinese sensitivity in the Northeast Sino-Soviet border area, as an aftereffect of the Sino-Soviet rift, has resulted in Chinese reinforcement of the area.

2. The USSR has curtailed all supply to China.

3. Reinforcement of this area will not be accompanied by large-scale Chinese Communist aggression in other areas.

V. CAPABILITY TO SUPPLY FORCES IN NORTHEAST CHINA

A. General

Most of the supply required to support military forces operating in or from Northeast China can be produced within the region itself. Mukden is the main logistic center for the area and is the heart of China's largest industrial complex which is generally distributed along the double-tracked Manchurian Railway from Dairen to Harbin. This logistical capability within Northeast China is enhanced by excellent transportation facilities (primarily rail) which connect the region with the large manufacturing and industrial centers and depot complexes at T'ien-ching, Peiping, P'ao-tou, and T'ai-yuan. Approximately 90,000 STPD can be delivered to Northeast China over the existing transportation network.

Within Northeast China the rail net is well developed and provides good capability to distribute supplies to points near the China/U.S.S.R. border (generally within 100 miles or closer) -- the only exception being that portion of the frontier area above 50 degrees north latitude. Using rail primarily, approximately 48,000 STPD can be forwarded from the Mukden area (serving as a theater central depot) to supply points in the immediate border area. The organization of the transportation network in Northeast China indicates that the bulk of this supply would probably be handled through

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theater sub-depots which would be established in the Harbin and Ch'i-ch'i-ha-erh areas. Redistribution points (either theater, field army or army group depots) serving the border areas would probably be located at Hailar, Nen-chiang, Pei-an, Nan-ch'a, Chia-mu-ssu, Chi-hsi, Mu-tan-chiang, and T'u-men. (See schematic diagram of main supply routes to border area.) The following table shows the tonnages which could be delivered to each of the eight border area redistribution points during periods indicated:

Supply Redistribution Point	Short Tons Per Day		
	October thru mid-April	Mid-April thru June	July and August
Hailar	8,240	6,050	5,920
Nen-chiang	5,150	1,300	1,000
Pei-an	3,100	790	700
Nan-ch'a	4,620	3,840	3,750
Mu-tan-chiang	19,450*	17,670*	17,340*
Chia-mu-ssu	6,480	4,570	4,430
Chi-hsi	4,700	4,700	4,700
T'u-men	6,030	5,280	4,550
TOTAL	49,070	35,500	33,690

*Note: 8,700 of this figure is non-additive, since 4,000 is forwarded to Chia-mu-ssu and 4,700 to Chi-hsi.

The above figures do not reflect the maximum tonnage that could be delivered to individual points if the requirements of other points in the area were to be disregarded, but represent an equitable distribution of available tonnage based upon each point's capability to utilize and forward supply to forces on the border.

B. Method of Supply Movement

1. Rail

Approximately 85% of all tonnage delivered to the eight border area redistribution points is moved by rail during the winter season. In

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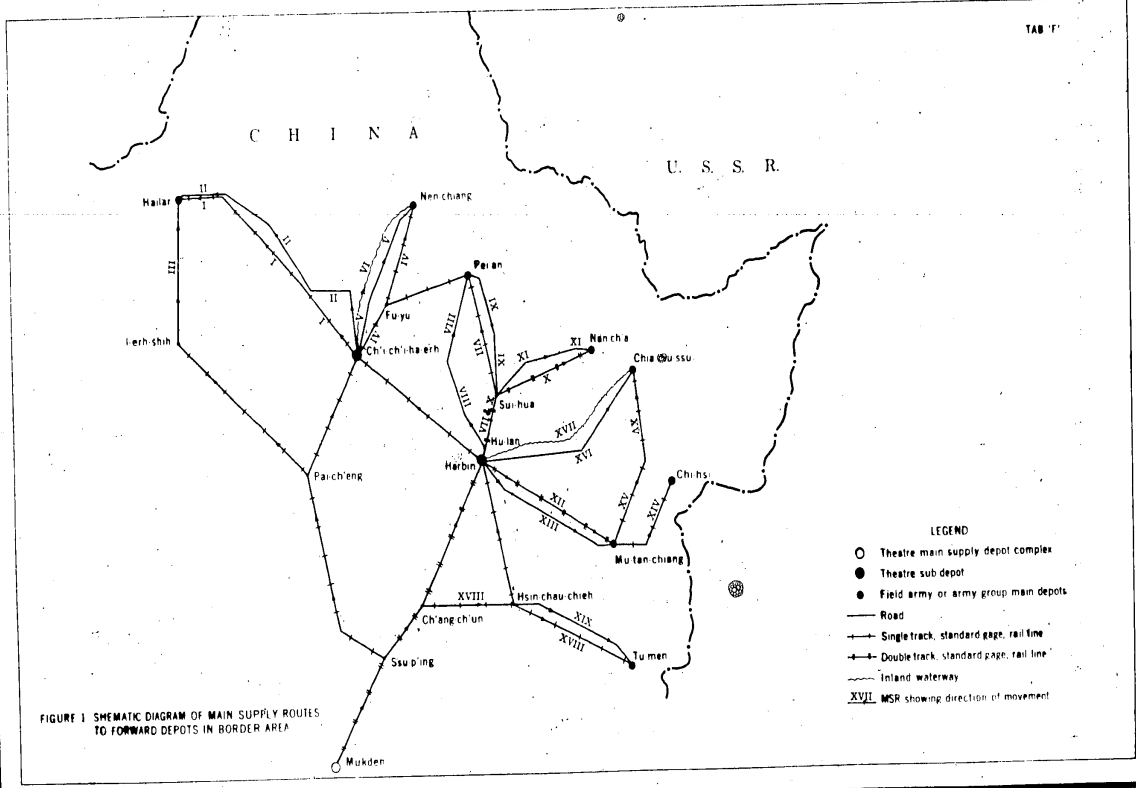

FIGURE 1 SMEMATIC DIAGRAM OF MAIN SUPPLY ROUTES TO FORWARD DEPOTS IN BORDER AREA

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spring and summer, the rail-transported percentage increases to about 97% or 98% of the total due to the deterioration in road conditions. The following table shows the daily tonnages which can be delivered by rail to the various points during the seasons indicated:

Supply redistrubution Point	Short Tons Per Day October thru mid-April	Mid-April thru June	July and August
Hailar	5,500	5,500	5,500
Nen-chiang	3,600	1,300	1,000
Pei-an	3,100	790	700
Nan-ch'a	4,620	3,840	3,750
Mu-tan-chiang	19,450*	17,670*	17,340*
Chia=mu-ssu	4,000	4,000	4,000
Chi-hsi	4,700	4,700	4,700
T'u-men	5,000	5,000	4,500
TOTAL	41,270	34,100	32,790

*Note: 8,700 of this figure is non-additive, since 4,000 is forwarded to Chia-mu-ssu and 4,700 to Chi-hsi.

2. Road

Because of the high rail capacity to the border area supply redistribution points, roads to these points are, in most cases, relegated to a secondary role. While roads serving these points could deliver approximately 14,000 STPD, 3800 STPD and 2400 STPD during winter, spring, and summer, respectively, only the tonnage shown below need be delivered by road to supplement the rail deliveries shown in the preceding paragraph in order to fill forward roads to capacity and allow adequate reserve tonnage at the supply redistribution points.

Supply Redistribution Point	Short Tons Per Day* October thru Mid-April	Mid-April thru June	July and August
Hailar	2740	550	420
Nen-chiang	1550	0	0
Pei-an	0	0	0
Nan-ch'a	0	0	0
Mu-tan-chiang	0	0	0
Chia-mu-ssu	2480	570	430
Chi-hsi	0	0	0
T'u-men	1030	280	50
TOTAL	7800	1400	900

*Note: Capabilities of roads to supply the above points as an auxiliary means of movement are shown in parentheses in the Table following this paragraph.

b. A fleet of about 8,800 cargo trucks would be required to deliver the high season tonnage shown above. During spring and summer, 1600 and 1100 vehicles would be required, respectively. Routes used average about 200 miles in length. During the winter season, roads in the area are frozen and can support traffic considerably in excess of maximum rated capacities in an unfrozen condition.

3. Inland Waterway

Two rivers, the Sungari and Nonni, can be used during the navigable season (normally May to October) to forward supplies to Chia-mu-ssu and Nen-chiang, respectively. The Sungari can be used to deliver up to 4800 STPD to Chia-mu-ssu and provides a good means of forwarding high tonnages to forces on the border. The Nonni can be used to move 450 STPD to Nen-chiang from where supply to the border would

be moved by track. [illegible] supply redistribution points and the seasonal nature of river transport in Northeast China, both the Sungari and Nonni Rivers have been considered as secondary transportation means and have not been used in arriving at tonnages to be delivered to the points shown in paragraph A, above.

c. Availability of Rolling Stock, Motor Vehicles, and River Craft

1. Rolling Stock

The rolling stock inventory in Northeast China is unknown; however, it is estimated that adequate motive power and freight cars are available for use on the portion of the standard-gage system considered in paragraph B1, above.

2. Motor Vehicles

The cargo vehicle inventory in Northeast China is also unknown. The number of vehicles (up to 8,800) required to move the tonnages shown in paragraph B2, above, could be made available to support military operations in the area.

3. River Craft

River craft operating on inland waterways in northeast China are believed to be sufficient in number to permit movement of daily tonnages equal to the maximum capacities given for specific navigable portions in this study. River craft would be an alternate means of movement for supplies to the border area redistribution points cited in preceding paragraphs.

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be moved by truck. Because of the good rail and road capabilities to border area supply redistribution points and the seasonal nature of river transport in Northeast China, both the Sungari and Nonni Rivers have been considered as secondary transportation means and have not been used in arriving at tonnages to be delivered to the points shown in paragraph A, above.

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C. Depots in Northeast China

1. Existing identified measurable military covered-storage facilities in Manchuria have capacities to accommodate over 300,000 tons of ammunition, and about half a million tons of general supply. POL facilities, both civilian and military, have a total capacity of over half a million metric tons. Depots of military stores are heavily concentrated throughout southwest, southcentral, and central Manchuria with the greatest concentration along the main rail lines serving the area. Major complexes are located on the southern Liaoning Peninsula, the Chin-chou area, the An-tung - Feng-ch'eng area, the Shen-yang - Fu-shun area, and in the vicinity of T'ieh-ling, Ssu-p'ing, Harbin, T'ao-an, and Ch'i-ch'i-ha-erh.

a. Southern Liaoning Peninsula: This complex includes the army general depot at Dairen, which covers 220 acres and includes 140,000 square feet of covered storage facilities and additional open storage, an army warehousing facility near Chin-hsien providing about 100,000 square feet of covered storage, and numerous small general supply facilities scattered about the area. Ammunition storage facilities include seven identified sites, most of them centered in the Chin-hsien area, with a total maximum capacity of 37,000 short tons of bunkered or revetted covered ammunition storage. Three POL sites in Dairen and one site at Port Arthur have a combined maximum capacity of 177,000 metric tons.

b. Chin-chou Area: This complex includes POL storage sites at Chin-chou, Lien-shan, and at Hu-lu-tao with a combined maximum capacity of 84,000 metric tons. A military storage depot at Chu-chou contains warehousing covering about 150,000 square feet, and additional open storage facilities at an adjacent site appear to be military. To the north, at the I-hsien division complex, the covered storage facilities of over 750,000 square feet appear to greatly exceed the normal unit requirements in that area. Additionally, an ammunition storage area near I-hsien contains 40 revetted and bunkered storage buildings at two sites.

c. An-tung - Feng-ch'eng Area: At An-tung there is an explosives plant which is road and rail-served. Included in the plant complex is an area containing 11 revetted storage buildings. In the An-tung area also, there is an ammunition depot of medium size containing 17 dispersed and revetted storage buildings and entrances to three probable storage caves; the measurable storage buildings are capable of storing 6,500 short tons of ammunition. General storage facilities located at barracks installations in the An-tung area greatly exceed the normal requirements of the installations, therefore allowing stockage for contingencies. Located to the north in the Feng-ch'eng area is an ammunition depot containing 30 revetted storage buildings and 17 caves fronted by blast walls; the measurable buildings are capable of accommodating 5,000 short tons of ammunition. A general ordnance depot covering 3,000 x 3,000 square feet and containing 52 buildings, including shed type and warehousing, is located just northwest of An-tung.

d. Shen-yang - Fu-shun Area: In the Shen-yang complex there are several major arsenals. The 90th arsenal, covering 387 acres and containing 646 buildings, is road and rail-served. Buildings range in size up to 665 x 275 feet. An adjacent ordnance depot contains warehousing and storage-type buildings totalling over 500,000 square feet of covered area. The Wen-kuan-t'un sub-arsenal north of Shen-yang is a road and rail-served installation covering 980 acres and containing 1,033 buildings, including an assembly and fabricating area, an explosives processing and fabricating area, and an explosive storage area. To the south at Liao-yang is another rail and road-served sub-arsenal containing 863 buildings with assembly, fabricating, processing, and explosive storage facilities within its complex. Also in the Shen-yang area there are large general supply depots with over a million square feet of covered storage and extensive open storage facilities. Twenty-seven miles to the northeast there is a road and rail-served ammunition depot containing 43 revetted storage buildings, five large cave entrances, and numerous administrative and support-type buildings, capable of accommodating 13,000 tons of ammunition in measurable numbers. Near Fu-shun there is an ammunition depot containing 125 revetted storage warehouses with a combined capacity of 32,000 tons, additional unrevetted

storage buildings providing 78,000 square feet for processing, shipment, and temporary storage, and another storage area with 35 buildings and a capacity of 5,000 short tons of ammunition.

Three POL storage sites in Fu-shun have a combined maximum capacity of 102,000 metric tons and a site in the Shen-yang area has a 17,000 metric ton capacity.

e. T'ieh-ling Area: In the T'ieh-ling area there is a road and rail-served ordnance depot containing 15 warehouses, 11 shop buildings, 100 support buildings and large open storage facilities. Located four miles to the south of town is a rail-served general military supply depot with facilities for 500,000 feet of covered storage. A POL facility is at T'ieh-ling and has a maximum capacity of 12,000 metric tons. An ammunition depot at T'ieh-ling has a revetted covered storage capacity in excess of 3,000 tons.

To the northeast at Sun-chia-t'ai is a POL storage facility with a maximum capacity of 12,000 metric tons and three military general supply facilities of moderate capacity.

f. Ssu-p'ing Area: In the Ssu-p'ing area there are three small road-served general military supply warehouse areas. POL facilities for storing a maximum of 15,000 metric tons are located at two sites, and in the general area of Ssu-p'ing there are one rail-served and two road-served ammunition depots. The former contains 38 revetted and 44 bunkered storage buildings, and the latter two contain 30 and 54 revetted storage buildings respectively, with a combined covered storage capacity of over 17,000 short tons of ammunition.

g. Harbin Area: At Harbin there is an ammunition depot with extensive revetted warehousing containing over 265,000 square feet of covered storage capable of accommodating over 25,000 short tons. Also in Harbin is a large rail and road-served army general supply depot with over 400,000 feet of covered storage, and a probable military supply depot containing 33 buildings, eight of which are large warehouse types, and facilities for large amounts of open storage. Maximum capacity of a POL storage site at Harbin is 53,000 metric tons.

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To the northwest at Hu-lan is a large rail and road-served military general supply depot containing 255,000 square feet of covered storage and facilities for additional open storage.

h. T'ao-an Area: A large rail-served ordnance test facility is located 10 miles northwest of T'ao-an and contains 132 buildings including storage, shops, personnel and support type buildings. An explosive storage area associate with the facility contains five large and five small revetted explosive storage buildings with a capacity of 2,600 tons of ammunition, and another associated facility contains 10 large storage-type buildings. A large road and rail-served military general supply depot near T'ao-an contains 100,000 square feet of covered storage and large open storage facilities. An ammunition depot located at Wang-yeh-miao is road and rail-served and contains 77 revetted warehouses capable of accommodating 32,000 short tons in revetted covered storage and additional unrevetted storage amounting to 143,000 square feet. Maximum capacity of a POL site in the area amounts to 10,000 metric tons.

i. Ch'i-ch'i-ha-erh Area: This area has POL facilities at Erh-shi-ssu, Chu-chia-kang, Fu-la-erh-chi, and at Sha-erh-t'u with a combined capacity of 228,000 metric tons. Large general supply depots, all road and rail-served, located at Ch'i-ch'i-ha-erh, Fu-la-erh-chi, and at Chu-chia-kang have a combined total of over a million square feet of covered storage. An ammunition depot containing 54 revetted storage buildings with a 20,000 ton capacity is located at Ch'i-ch'i-ha-erh, as is a large road and rail-served general ordnance depot.

An arsenal with 19 processing buildings and 26 storage buildings is located at Nien-tzu-shan. Adjacent to the arsenal is another military storage facility containing 36 storage buildings, 31 of which are revetted, with a total ammunition capacity of slightly over 10,000 tons.

j. Other important depots

Large ammunition depots in addition to those listed above, include Shih-men-tzu with 21,000 ton capacity of revetted covered storage, Lin-k'ou with over 12,500 tons, Tun-hua with over 12,000 tons, Mu-tan-chiang which contains two depots

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with considerable unmeasurable underground storage, T'ung-hua with a capacity of over 13,000 tons of covered storage at two sites, Feng-ch'eng with a 10,000 ton

[redacted]

VI. CCAF SUPPORT AND LOGISTICS REQUIREMENTS

A. Strength and Deployment

1. Total Chinese Communist Air Order of Battle

	CCAF	CCNAF	CIVIL	TOTAL
Jet Fighters (Day)	1,425*	270	0	1,695
Jet Fighters (Night)	145	30	0	175
	1,570	300	0	1,870
Jet Light Bombers	160	130	0	290
Prop Light Bombers	150	5	0	155
	310	135	0	445
Jet Medium Bombers	2	0	0	2
Prop Medium Bombers	15	0	0	15
	17	0	0	17
Reconnaissance	0	6	0	6
Transports**	147	17	88	252
Helicopters	18	0	0	18

* Probably includes a small number (about 10) MIG-21s.
** Transport totals do not include 95, 28, and 315 small AN-2 COLT transports in the CCAF, CCNAF, and Civil Air Bureau respectively

2. Deployment

(1) Chinese air units are presently deployed along the east coast of China with concentrations of strength around Port Arthur, Peiping, Tsingtao, and Shanghai. Under present conditions it is most improbable that the Chinese would withdraw from the area opposite Taiwan or Peking the jet fighters necessary for air defense of these areas. At least 200 jet fighters (approximately seven regiments) are considered necessary to maintain a minimum defense in these areas. The two air regiments in southern China at Meng-tzu West and Kum-ming (about 60 jet fighters) would also probably remain at their present stations to provide air defense against any attack from the south. However, in order to determine Chinese capability to operate in the Siberian area and to estimate the logistics 25X

support required to support operations, the entire CCAF, CCNAF and Civil Air Bureau aircraft inventories have been considered within this Tab.

B. Airfields

1. The Chinese could use the following airfields for operations against Soviet Siberia (for aircraft deployment and POL capacities see chart in Paragraph D).

Airfield	Coordinates	Runway Length	Surface
An-Tung	40-01N 124-17E	6500	Concrete
Ch'ang-Ch'un South	43-44N 125-15E	7400	Sod
Ch'ang-Ch'un West	43-54N 125-12E	7500	Concrete
Cheng-Chia-Wo-Pu	49-30N 127-15E	4000	Concrete
Ch'ih-Feng Southwest (1)	42-14N 118-59E	5000 (est)	Rolled Earth
Chin-Chow Southeast (1)	29-03N 121-45E	6400	Asphalt
Chin-Hsi	40-45N 120-53E	4900	Concrete
Chin-Hsien West	41-06N 121-04E	7200	Concrete
Chou-Shui-Tzu	38-58N 121-33E	6900	Concrete
Fu-Hsien	39-40N 121-46E	8200	Concrete
Fu-Sin	42-04N 121-43E	6500	Sod
Hai-Lang	44-31N 129-34E	6000	Concrete
Hailar East	49-12N 119-49E	4400	Rolled Earth
Hailar Southwest	49-10N 119-4[illegible]E	7000	Concrete
Harbin Southeast	45-45N 126-41E	5000	Sod

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Airfield	Coordinates	Runway Length	Surface
Hsing-Ch'eng	40-34N 120-42E	8500	Concrete
Hua-Chia-Tun	39-16N 122-05E	6500	Concrete
K'ai-Yuan	42-32N 123-59E	6600	Concrete
K'uan-Tien West	40-42N 124-36E	6600	Concrete
Kung-Chu Ling	43-31N 124-47E	8000	Concrete
Ku-Shan-Tzu	42-02N 125-44E	6400	Concrete
Ku-Tien-Tzu		6400	Concrete
La-Lin	45-16N 126-53E	8400	Concrete
Liao-Yang West	41-17N 123-05E	6500	Concrete
Liao-Yuna North	43-35N 123-36E	8200	Concrete
Lin-Yu South	39-58N 119-44E	6600	Concrete
Liu-Ho	42-15N 125-43E	6600	Asphalt
Mukden North	41-52N 123-26E	8600	Concrete
Mukden Southeast	41-47N 123-30E	6400	Concrete
Mukden Southwest	41-46N 123-22E	4600	Concrete
Mukden West	41-49N 123-18E	6750	Concrete
Nen Chiang North	49-14N 125-20E	4900	Asphalt
Pei-Tzu-Miao	43-51N 116-05E	4000	Graded Earth

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P'ing-Fang	45-36N 126-40E	7000	Concrete
P'u-Lan Tien	39-27N 122-01E	8200	Concrete
P'u-Lan Tien South	39-19N 121-58E	6230	Concrete
San Shih-Li-P'u	39-17N 121-46E	6300	Concrete
Shih-Men-Tzu	48-25N 121-24E	4700	Concrete
Shih-Tou North (2)	42-13N 129-23E	5200	Concrete
Shuang-Ch'eng	45-24N 126-18E	8000	Sod
Ssu-Ping 1	43-09N 124-18E	6600	Concrete
Ssu-Ping 2	43-13N 124-13E	4000	Concrete
Sui-Chung	40-18N 120-22E	7800	Concrete
Sun-Chia-Tun	45-40N 126-42E	9000	Sod
Ta-Pao	40-32N 124-14E	6500	Concrete
Ta-Ting-Kou	39-57N 124-09E	6800	Concrete
Teng-Ao-Pao	41-06N 122-51E	7500	Concrete
T'u-Ch'eng-Tzu	38-54N 121-15E	8200	Concrete
Tung-Ching-Ch'eng	44-07N 129-13E	4900	Asphalt & Concrete
Tung Feng	42-04N 125-30E	6500	Concrete
Tun-Hua East	43-21N 128-16E	4000	Asphalt

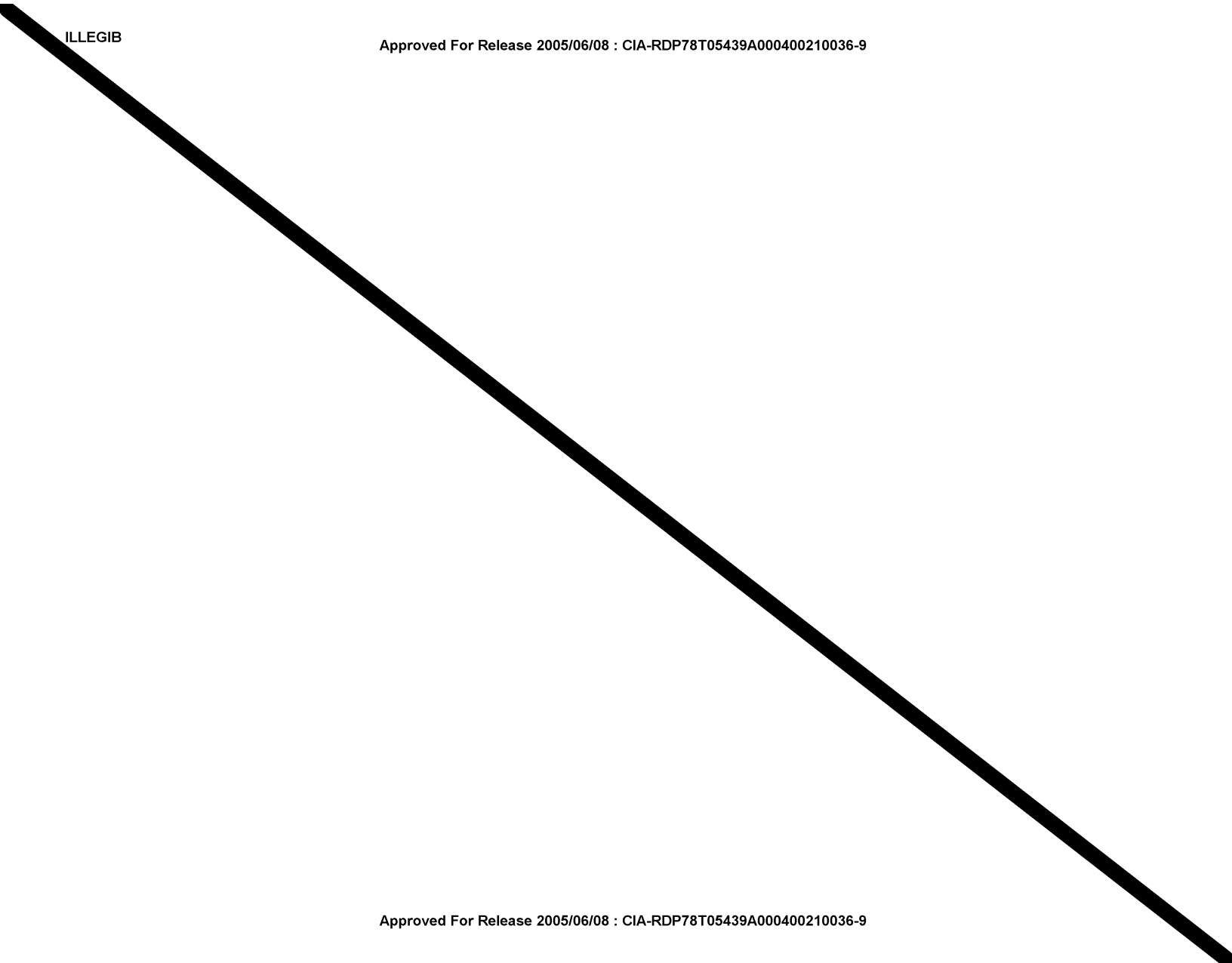
Airfield	Coordinates	Runway Length	Surface
Tun-Hua West	43-21N 128-12E	4000	Asphalt & Concrete
Wang Kang	45-40N 126-32E	5000	Sod
Wen Chun Northeast	44-27N 129-32E	4900	Macadam (Temporary)
Ya-Men-Tun	47-14N 123-55E	7800	Concrete
Yen-Chi South	42-53N 129-27E	6700	Concrete
Ying-Ch'eng-Tzu	39-01N 121-23E	7000	Concrete

C. Offensive Operations

(1) The Chinese could deploy their entire air force and naval air force into airfields that would place them within range of Vladivostok and the eastern Sino-Soviet border area. With these aircraft the Chinese could fly about 2,550 sorties per day (2,240 air defense or jet fighter ground support and 310 piston and light jet bomber ground support). After approximately 90 days of combat, this sortie rate would drop by about fifty per cent due to necessary aircraft maintenance and other logistic problems (this figure does not include combat losses). The Chinese could also utilize their 2 TU-16 (BADGER) and 15 TU-4 (BULL) medium bombers to bomb Vladivostok and other population centers; however, strong Soviet air defenses around Vladivostok would probably cause heavy Chinese losses.

D. Logistics

1. The following chart shows the logistic support required for Chinese air operations against Soviet Siberia:



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E. Defensive Operations

1. Detection and Control

The air defense center at Mukden, headquarters of the Northeast China Air Defense District, controls the Chinese air defenses opposite Soviet Siberia. A sparse early warning radar network covers only the eastern half of the Manchurian-Siberian border and Ground Control Intercept (GCI) coverage is limited to the Vladivostok area. This system has been considered adequate due to the free interchange of air warning information which is still in effect between the Soviets and the Chinese.

2. AAA Order of Battle

The Northeast China Air Defense District is currently credited with 368 light and 86 medium AAA guns. All of these weapons are located adjacent to population centers and military bases. In the immediate vicinity of Peiping there are five SA-2 surface-to-surface missile sites.

3. Aircraft

The primary mission of the MIG fighters listed in the table accompanying paragraph D would be air defense. These aircraft would be under the over-all control of the air defense headquarters at Mukden. Both CCAF and CCNAF aircraft are controlled by joint Air Defense Command control centers.

F. Airlift, Aerial Resupply, and Airborne Operations

1. Airlift

a. For a short term maximum effort the Chinese could commit all light and medium transports of the CCAF, CCNAF, and Civil Air inventories to support of operations against Soviet Siberia. The total inventory is:

Type	Total	CCAF	CCNAF	Civil Air
C-46	26	26	-	-
C-47	3	3	-	-
LI-2 (CAB)	73	35	13	25
IL-12 (COACH)	88	33	-	55
IL-14 (CRATE)	51	47	4	-
IL-18 (COOT)	5	2	-	-
VISCOUNT	6	1	-	5
	252	147	17	85

b. With these 252 aircraft, the Chinese would be capable of delivering approximately 785 tons of supplies per day to forward airfields for an operation lasting not more than two weeks. After 14 days, delivered tonnage would drop to about 490 tons per day due to normal difficulties of aircraft maintenance.

2. Aerial Resupply

With the light and medium transports of the air force, naval air force, and Civil Air Bureau the Chinese would be able to air drop approximately 615 tons per day. After two weeks of sustained operations this total would drop to about 380 tons. These totals do not include AN-2 (COLT) small transports of the three air services. If the Chinese employed these aircraft from the many small, natural surface fields available, they could drop an additional 355 tons, decreasing after two weeks of operations to approximately 220 tons.

3. Airlift Capability

a. The 13th Air Division is the only Chinese transport unit trained for airborne operations. Using this unit, the Chinese could air drop two airborne battalions. In the two days following the initial drop, they could air land one infantry regiment and the remainder of one light infantry division within four to five weeks.

b. The Chinese could augment the 13th Air Division with the remaining transports of the CCAF and CCNAF and, also with those of the Civil Air Bureau. Using all military and civil aircraft, the maximum the Chinese could drop in one lift would be the assault elements of one airborne division (7200 troops). A short training period for civil air crews and minor modifications of aircraft would be necessary.

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VII. CHINESE COMMUNIST LOGISTIC CAPABILITIES IN NE CHINA

A. General

1. The northeastern frontier of China adjoining the USSR, by virtue of the road and rail network and distribution of military depots, consists of three areas.

2. These areas, shown on the attached sketch map, are designated the Northern, Central, and Eastern areas. The approximate boundaries are:

a. Northern Area

From the Sino-Mongolian frontier to a line running from approximately 49° 25'N/120° 00'E to 46° 00'N/125°00'E.

b. Central Area

From the southern boundary of the Northern area to a line running from approximately 47° 35'N/134°40'E to 45°20'N/129°00'E.

c. Eastern Area

From the southern boundary of the Central Area to the area where the Sino-Soviet-Korea frontiers meet.

3. The offensive and defensive capabilities of the Chinese on the Sino-Soviet frontier are not projected into Soviet territory. Capabilities are given at the frontier, i.e., what could be supported under existing conditions in an initial attack or in defense of the immediate frontier. An additional capability is given at various road and rail junctions where supportable concentrations would likely occur before hostilities. These additional forces augment the frontier forces capability for defense of these key points, in the event of a Soviet attack and limited penetration of Chinese territory.

4. The areas are considered individually in the following sub-paragraphs. Three seasonal capabilities are shown; winter, spring, and

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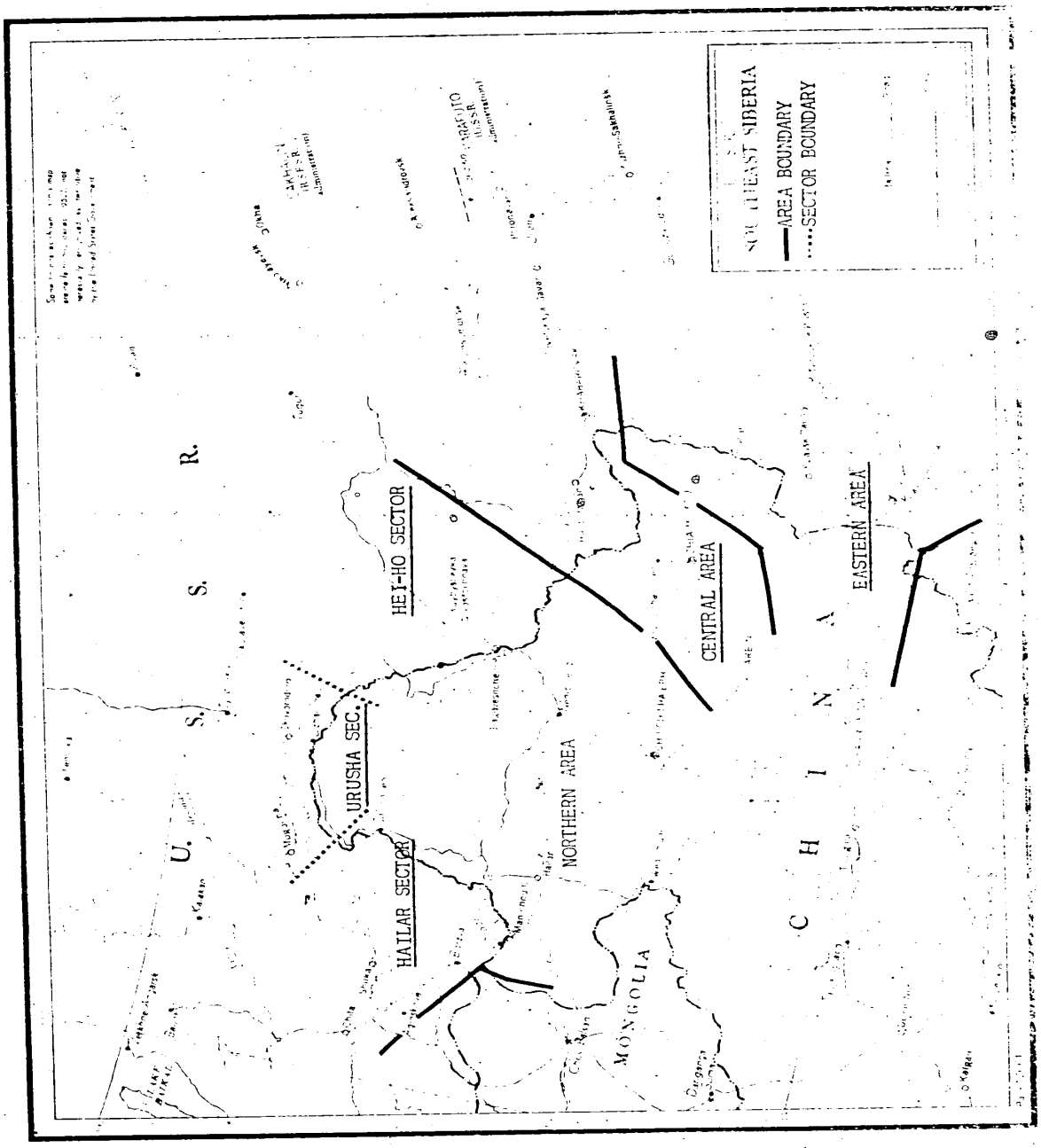

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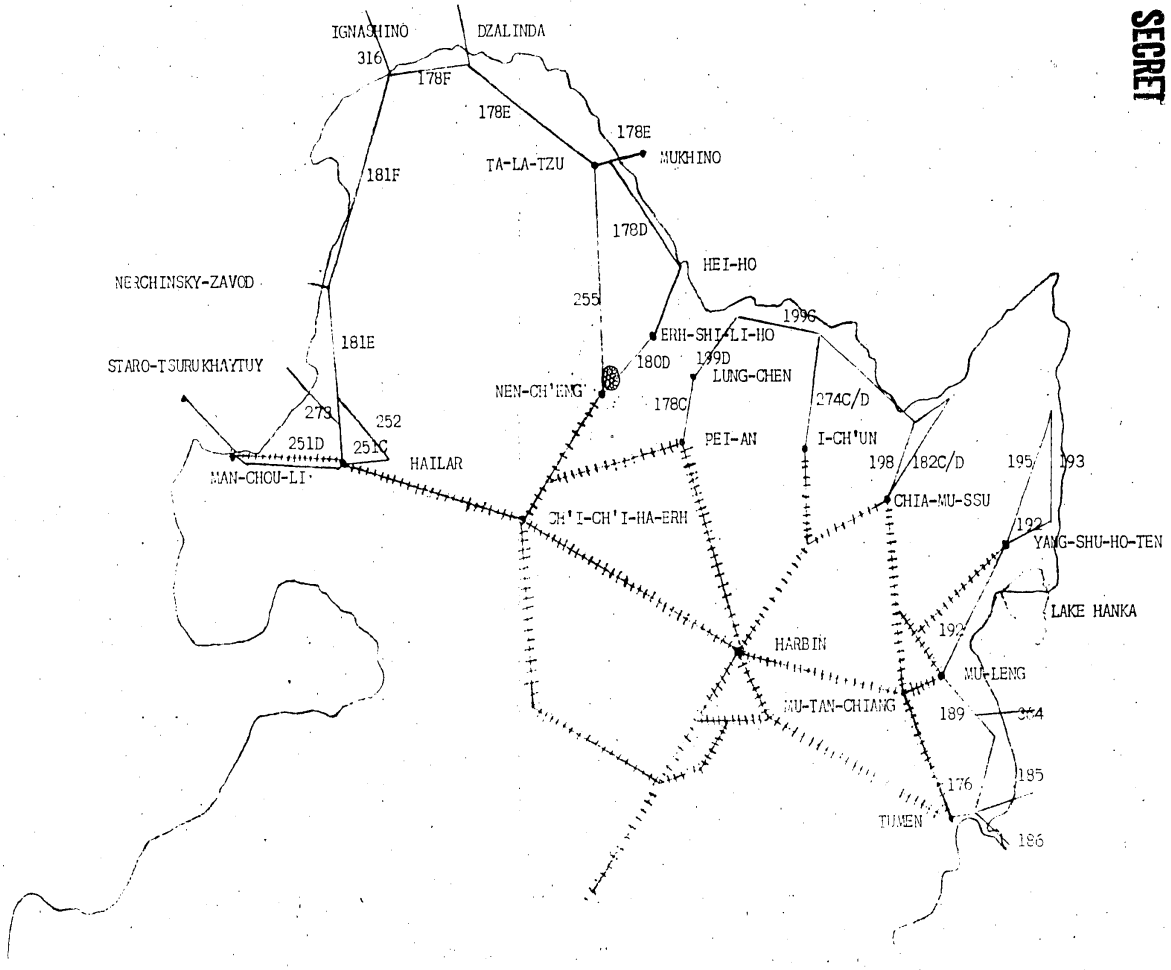

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summer (the fact that autumn capability is a little higher than summer capability has little significance when related to the sustained capability and is not, therefore, given).

5. Supply available at the theater forward supply depots, at concentration areas and on individual routes are shown in Section V, chart accompanying paragraph B and Appendix B.

B. Northern Area

1. The supply base

The supply base for this area is Ch'i-ch'i-ha-erh. Road and rail routes supply this base from Mukden (Shen-yang) and T'ao-an. There is considerable military manufacturing capability in Ch'i-ch'i-ha-erh.

2. Forward supply depots

a. No forward supply depots are known to exist close to the frontier in the Northern area, but aerial photo coverage of this area is poor.

b. If no supply depots exist, establishment of such facilities would be necessary before any major operation could begin. In the event of military operations, frontier theater forward supply depots would probably be located as follows:

Hai-lar (Hu-lun)

Nen-ch'eng

Pei-an

c. To support a minimum of two armies from each of these depots, the Chinese would require approximately 500 personnel to man each depot (3.7 short tons per day (STPD) @15 lbs. per man per day).

3. Concentration areas

Probable concentration areas forward of theater forward supply depots and sufficiently removed from the frontier for security, yet on approach routes to frontier crossing axes, are:

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a. Ta-la-tzu area

Concentration area for routes across and parallel to the frontier to the north and west.

b. Erh-shih-li-ho area

Concentration area for the route to Blagoveshchensk (USSR) and for minor routes to the north on the west bank of the Amur River.

c. Lung-chen area

Concentration area for routes leading to the frontier from Sun-wu.

4. Cross-frontier routes

Within the Northern area there are three natural sub-divisions of the roads leading to the Amur River. Many minor trails lead to sites where ferries could be established, but in this study we consider only the major Chinese and Russian roads leading to the river, which are, or could be connected by ferry. Each sector is considered separately.

a. Hai-lar sector

North and west and leading from Hai-lar, three routes cross into the USSR: Route 251D to Borzya, Route 273 to Starotsurukhaytuy, and Route 181E to Nerchinsky Zavod.

b. Northern (Urusha) sector

This area can be supplied only from the Hai-lar area and from Nen-ch'eng. Possible ferry sites within the area are on Route 316 to Urusha and Route 263 to Skovoradino.

c. Hei-ho sector

There are three major Soviet routes in this area, all leading from the Siberian Railway, which, after crossing ferries on the Amur River, converge on Nen-ch'eng by routes 255/328 from Mukhino and

by routes 80D/178C/313/314 from Blagoveshchensk. Converging on Pei-an are routes 178C/199D/312 from Zavitinsk.

5. Force capability (Northern Area)

a. Table A, pages 29-31, shows in detail the combat forces that the Chinese could support in the northern areas along routes to possible river crossing sites.

b. It should be noted that the northern (Urusha) sector can only be supplied from Nen-ch'eng and Hai-lar.

C. Central Area

1. The supply base

The supply base for this area, as for the southern area, is Harbin. There is considerable military industrial capacity in Harbin. Double-track rail lines from Peiping can bring 40,000 STPD of supply into the base.

2. Forward supply depots

a. Chia-mu-ssu is the principal supply area already capable of supporting operations in the Central area. POL and ammunition storage facilities have been identified here and an additional large ammunition storage area has been identified nearby at Hsing-shan-chen. The barracks in Chia-mu-ssu are suitable for conversion to a large general supply depot in time of war.

b. An additional theater forward supply depot would probably have to be established on route 274B in the vicinity of I-ch'un, on the rail line from Harbin.

3. Concentration areas

a. Probable concentration areas for troops later to be deployed on the frontier would be east of Chia-mu-ssu and northeast of I-ch'un.

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b. Chia-mu-ssu

From this concentration area troops could be deployed by routes 198 and 199A to Ch'ao-yang-chen, and by routes 198 and 182C to the marshy southern part of the sector.

c. I-ch'un

This concentration area would serve the northern part of the sector via route 274C and D to Wu-yung and north to the boundary with the northern sector.

4. Cross-frontier routes

a. The Amur River delineates the frontier between China and the USSR. Major ferries connecting major roads in China and Russia are:

(1) Between routes 274D/199B and route 327 to Arkhara (USSR) on the trans-Siberian railway.

(2) Between route 199A at Ch'ao-yang-chen and route 32b to Pashkovo (USSR).

(3) Between route 198 at Lo-pei and route 325 at Amurzet (USSR).

(4) Between route 182D at Chieh-ching and route 311 to Birofeld (USSR).

b. The Amur River is frozen for five months from November to April. It can then be crossed anywhere on foot, and for much of the time will support trucks drawing sleds.

5. Force capability (Central Sector)

a. Table B, page 31, shows in detail the forces the Chinese could support in the Central Area and on the Amur River near ferry sites.

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b. The capability given here makes no allowance for supply the Chinese move forward on the Sungari River. This major artery in Sino-Soviet commerce is frozen from late November to mid-April during which time considerable tonnage could be moved directly from Harbin to the frontier by trucks towing sleds. In the open season the river has a capacity of 4,800 STPD for vessels of up to 700 tons. In war, ships using the Sungari would be very vulnerable to air attack, and the navigation channel, which in places is only 300 feet wide, could easily be obstructed by a disabled vessel.

D. Eastern Area

1. The supply base

Harbin, the supply base for the Central area also supports the Eastern area.

2. Forward supply depots

a. A large number of depots serve the eastern area. The majority were probably transshipment points for supplies received from the USSR during the Korean War. With the exception of the ammunition storage depot south of Tung-ning, which is too close to the frontier, all could be used to support operations on the frontier. Additional field army depots to support tactical units, as in the northern and central sectors, would have to be established.

b. For details of existing depots, see Section V, paragraph 4.

3. Concentration Areas

a. Probable concentration areas for troops to be deployed on the frontier are: Yang-shu-ho-tzu, Mu-leng, and Tu-men.

b. Yang-shu-ho-tzu

This would probably be the concentration area for troops to be deployed to the area north of Lake Hanka.

c. Mu-leng

Troops to be deployed south of Lake Hanka against Ussuriysk would probably concentrate in the Mu-leng area.

d. T'u-men

Troops to be deployed between the Russo-Korean frontier and Vladivostok would probably concentrate at T'u-men.

4. Cross-frontier routes

a. The frontier north of Lake Hanka follows the Ussuri and Sungacha Rivers. Neither affords a complete water obstacle, both being fordable by vehicles where the exits are not marshy. In winter both rivers are frozen solid from mid-November to mid-March when the ice will support vehicles. We do not know if ferries cross these rivers, but would expect them to operate at Jao-ho and Hu-lin on Routes 323 and 324.

b. South of Lake Hanka no major obstacles block cross frontier movement. Routes suitable for operations are:

From Route 192 - Route 262 to Turiy Rog (USSR)

From Route 183 - Route 305 to Ussuriysk (USSR)

From Route 189 - Route 304 to Ussuriysk (USSR)

From Route 185 - Route 303 to the coast opposite Vladivostok

From Route 186 - Route 302 to Kraskino

c. The capacities of these routes are shown in [illegible].

5. Force capability

Table C, page 3[illegible]-38, shows in detail the combat forces, the Chinese could support in the Eastern Area, in the concentration areas, and on cross frontier routes.

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E. Summary of ground capability

1. The following table summarizes the strength of the combat forces the Chinese could sustain during the summer (lowest) period.

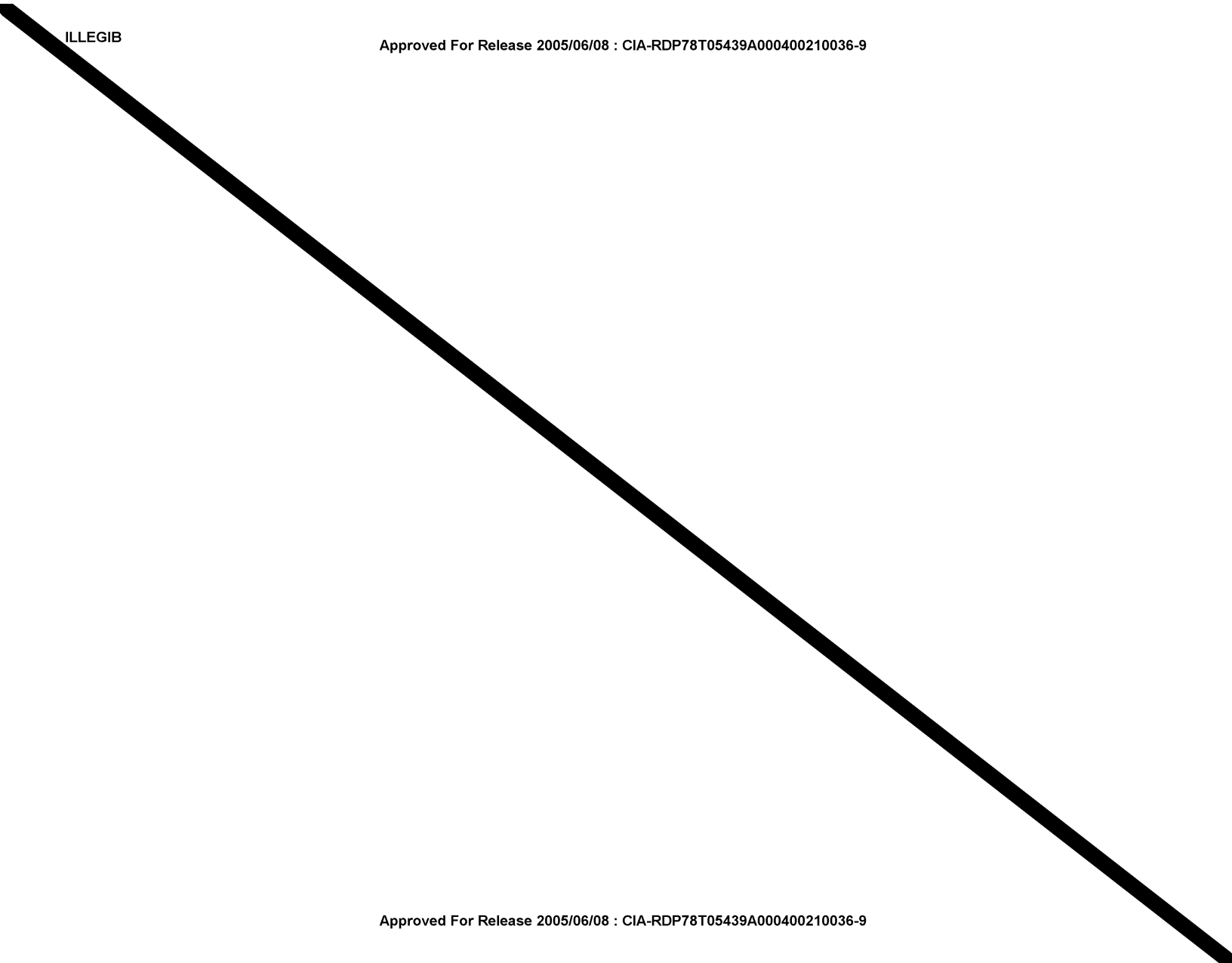
a. Part I shows the capability in frontier areas for immediate defense or the initial attack.

b. Part II shows the additional force capability at concentration areas in defense of these communication centers if threatened by limited Soviet penetration.

c. Part III is a recapitulation of supportable forces by area, and the total supportable force.

2. The total Chinese logistic capability for military operations against the Soviet Union is the lowest during the summer wet season. Even during this low season (which is depicted in the following chart) sustainable forces exceed the Infantry units currently held in the Chinese order of battle. Sustainable forces increase slightly during the spring season, and increase sharply during the winter season when roads are frozen and can sustain heavier tonnages.

3. Chinese logistic capability is almost totally dependent upon rail supply. Soviet interdiction of Chinese rail communications emanating from Mukden to the frontier areas would deprive the Chinese of 85% of their logistic backing.



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VIII. TARGETS

The principal means of transporting material in northeast China is over the extensive rail lines in the area. Disruption of rail traffic by destruction of railroad bridges and rail yards listed in Appendix A would reduce considerably the Chinese Communist capability to support large military forces in the border areas. The highways in the area, while of secondary importance in the movement of materiel to the forward supply depots, assume greater significance in the border areas.

Telecommunications targets are listed in Appendix A by area and numbered from 322 through 338.

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Target No.		Geog. Coords	Name/Description
1		38-11-00N/ 116-55-20E	Railroad bridge. Length-360 ft; width-single track; steel deck.
2		38-56-00N/ 116-55-10E	Railroad bridge. Length-1530 ft; width-single track; steel.
3		40-09-10N/ 120-04-09E	Two parallel bridges over the Shih Ho at Chien-wei. [redacted] width-single track; 19 span, steel deck girder.
4		40-05-30N/ 115-44-59E	Railroad bridge. Length-550 ft; width-single track; 6 span, steel deck. Both ends of bridge abut on tunnels.
5		40-02-30N/ 115-51-55E	Railroad bridge. Length-600 ft; width-single track; 6 span, steel deck. Both ends of bridge abut on tunnels.
6		40-03-33N/ 119-53-47E	Railroad bridge. Length-490 ft; width-single track; steel deck.
7		40-03-33N/ 119-53-47E	Railroad bridge parallel to No. 6. Length-540 ft; width-single track; steel deck.
8		41-06-50N/ 121-06-10E	Chin-chou railroad bridge over the Hsiao-ling Ho. Length-1335 ft; width-single track; 20 span, steel deck.
9		41-11-10N/ 121-22-55E	Ta-ling-ho-tien-tzu railroad bridge over the Ta-ling Ho. Length-[redacted] width-single track; steel deck.
10		41-57-28N/ 122-40-35E	Two parallel bridges over the Hsin-kai Ho at Hsin-min. Length-980 ft; width-single track; 37 span, steel deck.
11		39-55-00N/ 119-33-30E	Railroad bridge. Length-620 ft; width-single track; 9 span, steel deck.
12		39-56-00N/ 119-33-30E	Railroad bridge parallel to No. 11. Length-620 ft; width-single track; 9 span, steel deck.

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Target No	Geog. Coords	Name/Description
13	41-27-30N/ 120-03-20E	Railroad bridge. Length- [redacted] width-single track; 15 span, steel deck.
14	39-02-10N/ 116-59-00E	Liang-wang-chuang railroad bridge over an unnamed river. Length-2050 ft; width-single track; 35 span, timber.
15	42-02-49N/ 122-45-19E	Hsin-min railroad bridge over the Hsin-kai Ho. [redacted] width-single track; 27 span, steel deck.
16	40-19-37N/ 115-33-17E	Sha-cheng railroad bridge over the Kuan-ting Shui-ku. [redacted] width-single track; 24 span, steel deck.
17	39-51-22N/ 116-12-30E	Railroad bridge. [redacted] width-single track; steel.
18	39-51-10N/ 116-12-31E	Chang-hsin-tien railroad bridge over the Yung-ting Ho. [redacted] width-double track; 16 span.
19	40-20-30N/ 115-41-40E	Lang-shan-pao railroad bridge over the Kuan-ting Shu-ku. Length-2100 ft; width-single track; steel deck.
20	39-07-11N/ 121-44-59E	Railroad bridge. Length-250 ft; width-double track; steel.
21	39-21-20N/ 117-03-00E	Pei-tsang railroad bridge over the Yung-ting Ho. [redacted] width-double track; 7 span, steel.
22	39-15-22N/ 117-47-09E	Yang-tsun railroad bridge over the Pei-yun Ho. Length-1525 ft; width-double track; 21 span, concrete.
23	39-15-40N/ 117-47-09E	Han-ku railroad bridge over the Chien-kan Ho. Length-540 ft; width-single track; 4 span, steel deck.
24	39-15-40N/ 117-47-09E1	Han-ku railroad bridge over the Chien-kan Ho. Bridge is parallel to No. 23. Length-540 ft; width-single track; 4 span, steel.

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Target No	Geog. Coords	Name/Description
25	39-45-26N/ 118-47-01E	Luan-hsien railroad and highway bridges over the Luan Ho. Length-2600 ft; width-double track; 20 span, steel deck.
26	39-59-13N/ 119-43-49E	Lin-yu railroad bridge over the Ning-hai Ho. Length-1250 ft; width-double track; 13 span, steel.
27	40-19-40N/ 120-22-29E	Sui-ching railroad bridge over the Liu-ku Ho. [redacted] width-single track; 26 span, steel deck.
28	40-19-40N/ 120-22-29E	Sui-ching railroad bridge over the Liu-ku Ho. Length-1660 ft; width-single track; 17 span, steel deck.
29	40-19-40N/ 120-22-29E	Sui-ching railroad bridge over the Liu-ku Ho. [redacted] width-single track; 23 span, steel deck.
30	40-19-40N/ 120-22-29E	Sui-ching railroad bridge over the Liu-ku Ho. Length-800 ft; width-single track; 8 span, steel deck.
31	40-36-43N/ 120-41-30E	Hsing-cheng railroad bridge over the Hsing-cheng Ho. [redacted] width-single track; 28 span, steel.
32	40-36-43N/ 120-41-30E	Hsing-cheng railroad bridge over the Hsing-cheng Ho. [redacted] width-single track; 15 span, steel deck.
33	41-07-00N 121-06-10E	Chin-chou railroad bridge over the Hsiao-ling Ho. [redacted] width-single track; 12 span, steel deck.
34	40-26-52N/ 120-32-20E	Sui-chung railroad bridge over the Yen-tai Ho. Length-800 ft; width-single track; 15 span, steel.
35	40-26-52N/ 120-32-20E	Sui-chung railroad bridge over the Yen-tai Ho. Length-800 ft; width-single track; 15 span, steel. Bridge is parallel to No. 34.
36	41-10-50N 121-22-32E	Chin-ling-ssu railroad bridge over the Ta-ling Ho. [redacted] width-single track; 26 span, steel deck.

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Target No	Geog. Coords	Name/Description
37	42-00-36N/ 122-57-20E	Two parallel bridges over the Liao Ho at Chiu-liu-ho. [redacted] width-single track; 45 span, steel.
38	39-46-08N/ 122-03-20E	Railroad bridge. Length-600 ft; width-single track; 7 span, steel deck.
39	39-46-08N/ 122-03-20E	Railroad bridge parallel to No. 38. Length-600 ft; width-single track; 8 span, steel deck.
40	40-09-55N/ 122-08-40E	Two parallel bridges over the Hsiung-yueh Ho at Hsiung-yueh. [redacted] width-single track; 12 span, steel.
41	40-24-20N/ 122-19-50E	Kai-ping railroad bridge over the Ching Ho. Length-650 ft; width-single track; 6 span, steel truss.
42	40-24-20N/ 122-19-50E	Kai-ping railroad bridge over the Ching Ho. Length-660 ft; width-single track; 6 span, steel deck truss.
43	40-51-20N/ 122-44-00E	Two parallel bridges over the Liao Ho at Chu-liu-ho. [redacted] width-single track; 7 span, steel truss.
44	41-17-56N/ 123-12-42E	Liao-yang railroad bridge over the Tai-tzu Ho.. Length-1800 ft; width-single track; steel.
45	41-17-56N/ 123-12-42E	Liao-yang railroad bridge over the Tai-tzu Ho. Length-1800 ft; width-single track; steel.
46	39-48-10N/ 122-03-50E	Two parallel railroad bridges. Length-600 ft; width-single track; steel deck.
47	42-18-50N/ 123-51-48E	Two parallel bridges over the Chai Ho at Tieh-ling. Length-990 ft; width-single track; 9 span, steel.
48	43-22-35N/ 123-41-35E	Railroad bridge. [redacted] width-single track; 23 span, steel deck.

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Target No	Geog. Coords	Name/Description
49	41-57-50N/ 124-21-50E	Railroad bridge. Length-890 ft; width-single track; 16 span.
50	42-30-40N/ 125-40-20E	Railroad bridge. Length-420 ft; width-single track; 8 span, steel deck.
51	43-53-45N/ 125-21-14E	Chang-chun railroad bridge over the I-tung Ho. Length-650 ft; width-single track; 6 span, steel truss.
52	43-56-00N/ 126-38-00E	Railroad bridge.. [redacted] width-single track; 12 span, steel deck.
53	46-46-32N/ 127-01-29E	Sui-hua railroad bridge over the Hu-lan Ho. [redacted] width-single track; steel truss.
54	46-58-05N/ 128-01-00E	Railroad bridge. Length-680 ft; width-single track; 8 span, steel deck.
55	44-35-18N/ 129-39-48E	Mu-tan-chiang railroad bridge central over the Mu-tan Chiang. [redacted] width-single track; 25 span.
56	47-08-00N/ 130-16-30E	Railroad bridge. [redacted] width-single track; 3 span, steel deck.
57	44-32-29N/ 129-33-12E	Mu-tan-chiang railroad bridge south over the Mu-tan Chiang. [redacted] width-single track; 21 span, steel deck.
58	44-51-10N/ 130-29-30E	Railroad bridge. [redacted] width-single track; 11 span, steel deck.
59	38-24-00N/ 116-55-00E	Ts'ang-hsien rail yards.
60	40-23-42N/ 115-30-41E	Sha-ch'eng rail yards.

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Target No		Geog. Coords	Name/Description
61		39-50-55N/ 116-17-00E	Feng-t'ai railroad classification yards and shops.
62		39-49-21N/ 116-15-03E	Peiping railroad yards.
63		39-10-00N/ 117-12-04E	Tientsin railroad station, yards and shops north.
64		41-49-19N/ 123-20-50E	Mukden railroad yards west.
65		39-36-30N/ 118-10-54E	T'ang-shan railroad station, yards and shops.
66		39-55-38N/ 119-35-27E	Ch'in-huang-tao railroad classification yards and shops.
67		40-19-37N/ 120-20-25E	Sui-chung railroad yards.
68		40-24-00N/ 116-49-50E	Railroad bridge. Length-2100 ft; width-single track; 30 span, steel deck.
69		40-49-20N/ 119-02-46E	Railroad bridge. Length-925 ft; width-single track; 11 span, steel.
70		40-45-00N/ 120-52-00E	Lien-shen railroad station and yards.
71		41-07-10N/ 121-09-50E	Chin-chou railroad station, classification yards and shops.
72		41-00-00N/ 118-59-00E	Railroad bridge. [redacted] width-single track; 11 span, steel deck.

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Target No	Geog. Coords	Name/Description
73	41-14-05N/ 119-13-49E	La-ma-chang-tzu railroad bridge over a tributary of the Ling Ho. [redacted] width-single track; 17 span, steel deck.
74	41-21-00N/ 119-37-00E	Railroad bridges. Length-1050 ft; width-single track; 16 span, steel deck.
75	42-05-00N/ 122-50-00E	Kao-t'ai-tzu rail yards.
76	41-23-00N/ 119-46-00E	Kung-ying-tzu railroad bridge over a tributary of the Ling Ho. Length-1320 ft; width-single track; 20 span, steel deck.
77	41-42-00N/ 120-48-10E	Railroad bridge. Length-1575 ft; width-single track; 16 span, steel deck.
78	41-32-45N/ 121-14-00E	I-hsien railroad bridge over the Ta-ling Ho. Length-2515 ft; width-single track; 17 span, steel.
79	41-55-00N/ 121-32-00E	Railroad bridge. [redacted] width-single track; 36 span.
80	42-08-00N/ 122-25-00E	Railroad bridge. [redacted] width-single track; 18 span, steel.
81	45-21-58N/ 122-48-40E	Tao-nan railroad bridge over the Tao-erh Ho. Length-650 ft; width-single track; 10 span, steel deck.
82	43-13-30N/ 123-32-40E	Liao-yuan railroad bridge over the Hsi-liao Ho. [redacted] width-single track; 14 span, steel truss.
83	43-41-10N/ 122-52-40E	Railroad bridge. Length-545 ft; width-single track; 5 span, steel truss.
84	43-44-00N/ 124-17-00E	Railroad bridge. [redacted] width-single track; 25 span, steel.

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Target No		Geog. Coords	Name/Description
86		42-[illegible]-40N/ 12[illegible]-09-55E	Chang-wa railroad bridge over the Hsin-kai Ho. Length-1200 ft; width-single track; 12 span, steel deck.
86		41-18-30N/ 119-43-30E	Chien-p'ing railroad yards.
87		45-56-30N/ 12[illegible]-3[illegible]-35E	Hu-lan railroad bridge over the Hu-lan Ho. Length-1400 ft; width-single track; 14 span, steel.
88		45-48-43N/ 12[illegible]-41-[illegible]E	Ha-erh-pin railroad and highway bridge over the Sung Hua. [redacted] width-double track; 15 span, steel.
89		45-47-02N/ 12[illegible]-37-13E	Ha-erh-pin railroad bridge over the Sung-hua Chiang. Length-3220 ft; width-single track; 20 span, steel truss and steel deck.
90		45-07-42N/ 12[illegible]-06-50E	Tsai-chia-kou railroad bridge over the La-lin Ho. [redacted] width-single track; 10 span, steel.
91		45-07-52N/ 12[illegible]-06-50E	Tsai-chia-kou railroad bridge over the La-lin Ho. [redacted] width-single track; 10 span, steel. Bridge is parallel to No. 90.
92		44-4[illegible]-00N/ 12[illegible]-55-10E	Tao-lai-chao railroad bridge over the Sung-hua Chiang. [redacted] width-single track; 28 span, steel deck and steel truss.
93		44-4[illegible]-00N/ 12[illegible]-55-10E	Tao-lai-chao railroad bridge over the Sung-hua Chiang. [redacted] width-single track; 17 span, steel deck and steel truss.
94		44-3[illegible]-44N/ 12[illegible]-46-00E	Chang-chia-wan railroad bridge over the Yin-ma Ho. [redacted] width-single track; 9 span, steel deck.
95		44-36-44N/ 125-4[illegible]-00E	Chang-chia-wan railroad bridge over the Yin-ma Ho. [redacted] width-single track; 15 span, steel deck.
96		43-59-10N/ 12[illegible]-20-32E	I-chien-pao railroad bridge over the I-tung Ho. Length-1400 ft; width-single track; 23 span, steel.

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Target No.		Target Description
97	45-[illegible]/ 1[illegible]	[illegible]-ping railroad bridge over the Ching Ho. [redacted] width-single track; [illegible] span, steel.
98	[illegible]-01-1[illegible]/ 1[illegible]	Yin-chi-ning railroad bridge over the Tung-liao Ho. Length-970 ft; width-single track; [illegible] span, steel and [illegible].
99	43-[illegible]/ 1[illegible]	Kung-chu-ling railroad bridge over the Tung-liao Ho. Length-990 ft; width-single track; [illegible] span, steel deck.
100	42-[illegible]/ 1[illegible]	Shuang-liao-tai railroad bridge over the Ching Ho. [redacted] width-single track; 20 span, steel.
101	42-3[illegible]/ 1[illegible]	Shuang-liao-tai railroad bridge over the Ching Ho. Length-2500 ft; width-single track; [illegible] span, steel.
102	45-03-07N/ 124-07-29E	I-mien-po railroad bridge over the Ta-wen Ho. Length-300 ft; width-single track; 4 span, steel.
103	45-03-07N/ 124-07-29E	I-mien-po railroad bridge over the Ta-wen Ho. Length-300 ft; width-single track; 4 span, steel.
104	44-34-01N/ 124-21-13E	Hsi-lin railroad bridge over an unnamed river. [redacted] width-single track; 2[illegible] span, steel.
105	41-37-00N/ 121-13-00E	I-mien railroad yards.
106	44-04-00N/ 123-06-00E	Sui-fen-ho railroad bridge over the Ta-ping Chuan. Length-230 ft; width-single track; steel.
107	42-03-13N/ 121-44-18E	Fou-shih railroad yards.
108	[illegible]-[illegible]-18N/ 12[illegible]-[illegible]-[illegible]E	Yen-tung-chan railroad bridge over the Yin-ma Ho. Length-330 ft; width-single track; 1 span, steel.

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Target No		Geog. Coords	Nomenclature
109		43-17-00N/ 129-16-00E	Railroad bridge. [redacted] width-single track; 8 span, concrete.
110		41-44-00N/ 124-24-00E	Railroad bridge. Length-310 ft; width-single track; 7 span, concrete.
111		42-50-18N/ 127-03-51E	An-ch'a railroad bridge over the Tu-ma Chiang. Length-820 ft; width-single track; 13 span, steel deck.
112		44-44-31N/ 127-14-00E	Tu-chia railroad bridge over the La-lin Ho. Length-950 ft; width-single track; 13 span, steel deck.
113		43-21-10N/ 128-13-50E	Tun-hua railroad bridge over the Mu-tan Chiang. [redacted] width-single track; 4 span, steel.
114		42-54-02N/ 129-35-11E	Yen-chi railroad bridge over the Pu-erh-ha-tung Ho. Length-740 ft; width-single track; 12 span, steel.
115		42-00-00N/ 122-09-00E	Hsin-li-t'un railroad yards.
116		44-40-10N/ 129-39-50E	Mu-tan-chiang railroad bridge over the Mu-tan Chiang. [redacted] width-single track; 17 span, steel.
117		44-25-16N/ 129-29-38E	Ning-an railroad bridge over the Mu-tan Chiang. [redacted] width-single track; 17 span, steel.
118		38-48-13N/ 121-14-53E	Lu-shan railroad station, yards and shops.
119		43-00-15N/ 129-48-50E	Tu-men railroad bridge over the Pu-erh-ha-tung Ho. Length-920 ft; width-single track; 13 span, steel.
120		45-17-00N/ 131-13-00E	Railroad bridge. [redacted] width-single track; 10 span, steel.

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Target No.		Description
1.1	[redacted]	[redacted]
1.2	[redacted]	Two-span railroad bridge over the Tu-mei Ho. [redacted] width-single track: 2[redacted] span, steel.
1.3	[redacted]	[redacted]
124	[redacted]	[redacted]
125	[redacted]	[redacted]
126	[redacted]	[redacted]
127	41-24-30N/ 123-50-20E	An-shan railroad station, yards and shops, main.
128	43-30-30N/ 123-32-10E	Liao-yang railroad yards.
129	42-20-00N/ 123-52-00E	T'ien-ling railroad yards.
130	43-10-00N/ 124-20-20E	Ssu-p'ing railroad station, classification yards and shops.
131	40-01-10N/ 130-31-40E	Hsiao-pa-lang railroad bridge over the Wu-pei Ho. [redacted] width-single track; 10 span.
132	46-12-00N/ 130-30-00E	Railroad bridge. [redacted] width-single track; 7 span.

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Target No.	Coordinates	Item Description
136	46-26-00N/ 130-30-00E	Railroad bridge. Length-[redacted] ft; width-single track; 8 span, steel deck.
134	47-30-00N/ 130-[redacted]-00E	Chin-[redacted]-ssu railroad bridge over the Sung-[redacted] Chiang. Length-4450 ft; width-single track; [redacted] span, steel truss and steel deck.
135	46-[redacted]-12N/ 130-04-42E	Two parallel railroad bridges. [redacted] width-single track; 6 span.
133	46-43-42N/ 129-38-54E	Tung-yuan railroad bridge west over the Tung-wang-Ho. Length-935 ft; width-double track; steel deck.
137	47-01-30N/ 129-[redacted]-30E	Two parallel railroad bridges. Length-740 ft; wioth-double track; 8 span, steel deck.
138	48-08-00N/ 128-10-00E	Railroad bridge. Length-300 ft; width-single track; reinforced concrete.
139	48-13-00N/ 129-20-00E	Railroad bridge. [redacted] width-single track; reinforced concrete.
140	48-20-00N/ 129-18-00E	Railroad bridge. Length-375 ft; width-single track; reinforced concrete.
141	47-04-00N/ 128-12-00E	Railroad bridge. Length-330 ft; width-single track; 7 span, steel.
142	43-53-42N/ 128-2[redacted]-12E	Ch'ang-ch'un railroad yards and shops.
143	47-[redacted]-00N/ 126-59-30E	Ch'i-ch'i-ha-erh railroad yards.
144	47-40-00N/ 124-50-00E	Railroad bridge. [redacted] width-single track; 30 span.

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Target No	Geog. Coords	Name/Description
145	47-49-00N/ 126-42-00E	Railroad bridge. [redacted] width-single track; 7 span.
146	48-06-00N/ 126-40-00E	Railroad bridge. [redacted] width-single track; 12 span, steel.
147	48-11-00N/ 126-19-00E	Pei-an railroad bridge over the Wu-yu-erh Ho. Length-450 ft; single track; 30 span, steel.
148	46-46-58N/ 123-41-44E	Chiang-ch'iao railroad bridge over the Nen Chiang. [redacted] width-single track; 28 span, steel.
149	48-26-00N/ 124-47-00E	T'ao-lai-chao railroad bridge over the Sung-hua Chiang. Length-660 ft; width-single track; 10 span, steel.
150	47-10-00N/ 123-40-00E	Fu-la-erh-chi railroad bridge over the Nen Chiang. Length-1870 ft; width-single track; 21 span, steel deck.
151	49-11-00N/ 125-13-00E	Nen-chiang railroad yards.
152	49-15-25N/ 120-47-50E	Railroad bridge. Length-360 ft; width-single track; 5 span, steel.
153	49-14-07N/ 119-45-00E	Hai-la-erh railroad bridge over the I-min Ho. Length-750 ft; width-single track; 9 span, steel.
154	43-38-40N/ 122-14-00E	T'ung-liao railroad yards.
155	43-30-20N/ 123-32-10E	Shuang-liao railroad yards.
156	45-36-30N/ 122-51-20E	T'ao-an railroad yards.

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Target No	Geog. Coords	Name/Description
157	39-13-40N/ 115-45-40E	Ting-hsing railroad bridge over the Chu-ma Ho. Length-1450 ft; width-double track; 29 span, steel.
158	39-31-50N/ 116-00-00E	Cho-hsien railroad bridge over the Chu-ma-cha Ho. Length-1050 ft; width-double track; 16 span, reinforced concrete.
159	47-47-00N/ 124-27-00E	Fu-yu railroad yards.
160	43-52-00N/ 127-20-00E	Hsin-chan railroad yards and shops.
161	42-31-30N/ 125-40-46E	Mei-ho-k'ou railroad yards.
162	43-51-32N/ 126-34-25E	Chu-lin railroad yards.
163	44-10-00N/ 125-49-00E	Chiu-t'ai railroad yards.
164	49-35-07N/ 117-26-04E	Man-chou-li railroad yards, shops and transfer site.
165	46-24-00N/ 125-19-00E	An-ta railroad yards.
166	47-09-30N/ 123-48-30E	Ang-ang-ch'i railroad classification yards and shops.
167	48-00-00N/ 122-43-00E	Pu-t'e-ha-ch'i railroad yards.
168	48-45-20N/ 121-54-25E	Po-k'o-t'u railroad yards.

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Target No	[redacted]	Geog. Coords	Name/Description
169		49-13-30N/ 119-44-15E	Hai-la-erh classification yards and shops.
170		48-13-50N/ 126-30-00E	Pei-an railroad station, yards and shops.
171		46-38-20N/ 127-01-00E	Sui-hua railroad yards.
172		47-08-00N/ 129-16-00E	Nan-ch'a railroad yards.
173		44-25-48N/ 131-08-42E	Sui-fen-ho railroad yards, shops and transfer site.
174		45-32-00N/ 126-59-00E	A-ch'eng railroad yards.
175		44-35-08N/ 129-36-24E	Mu-tan-chiang railroad classification yards and shops.
176		44-40-00N/ 130-31-00E	Hu-lin railroad yards.
177		42-58-19N/ 129-49-44E	T'u-men railroad yards and shops.
178		44-28-00N/ 126-58-00E	Shu-lan railroad yards.
179		43-44-00N/ 127-28-00E	Chiao-ho railroad yards.
180		43-20-55N/ 128-12-19E	Tun-hua railroad yards.

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Target No	Geog. Coords	Name/Description
181	45-17-09N/ 130-15-41E	Lin-k'ou railroad yards.
182	45-44-55N/ 130-33-40E	P'e-li railroad yards.
183	45-49-02N/ 130-22-55E	Chia-mu-ssu railroad yards.
184	45-48-00N/ 132-59-00E	Hu-jao railroad yards.
185	45-18-00N/ 130-58-29E	Chi-hsi railroad yards and shops.
186	47-24-00N/ 139-22-00E	Hao-kang railroad yards.
187	48-07-00N/ 129-09-00E	Wu-ying railroad yards.
188	40-14-18N/ 116-07-48E	Nan-k'ou railroad yards and repair plant.
89	39-08-10N/ 117-05-50E	Railroad bridge. Length-345 ft; width-single track; steel.
90	41-22-35N/ 121-14-50E	Railroad bridge; Length-415 ft; width-single track; steel deck.
91	41-38-50N/ 119-18-00E	Railroad bridge. Length-1510 ft; width-single track; 23 span, steel deck.
92	41-51-55N/ 122-02-10E	Railroad bridge. Length-530 ft; width-single track; 12 span, steel deck.

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Target No	Geog. Coords	Name/Description
193	41-58-30N/ 123-37-50E	Railroad bridge. Length-920 ft; width-single track; 18 span, concrete.
194	41-41-38N/ 124-02-11E	Railroad bridge. Length-990 ft; width-single track; 15 span, steel deck.
195	45-20-10N/ 130-52-10E	Railroad bridge. Length-750 ft; width-single track.
196	45-33-12N/ 123-14-10E	Railroad bridge. [redacted] width-single track; 12 span, steel deck.
197	45-54-43N/ 122-15-30E	Railroad bridge. Length-305 ft; width-single track.
198	46-06-55N/ 121-58-30E	Railroad bridge. Length-490 ft; width-single track, 7 span, steel deck.
199	49-17-00N/ 120-44-30E	Railroad yards.
200	49-12-15N/ 120-56-40E	Railroad yards.
201	49-05-30N/ 121-03-10E	Railroad yards.
202	48-50-40N/ 121-36-00E	Railroad yards.
203	48-40-15N/ 122-01-40E	Railroad yards.
204	48-32-40N/ 122-08-20E	Railroad yards.

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Target No	Geog. Coords	Name/Description
205	48-18-30N/ 122-26-00E	Railroad yards.
206	48-07-00N/ 122-25-50E	Railroad yards.
207	47-19-40N/ 123-05-30E	Railroad yards.
208	47-12-05N/ 123-39-10E	Railroad yards.
209	48-28-35N/ 124-50-10E	Railroad yards.
210	48-11-45N/ 124-37-40E	Railroad yards.
211	41-06-30N/ 121-06-15E	Chin-chou highway bridge over the Hsiao-ling Ho. Length-1600 ft; [redacted] 22 span, concrete deck.
212	51-03-00N/ 115-38-00E	Highway bridge. Length-850 ft; 8 span, steel deck.
213	42-19-40N/ 123-50-15E	T'ieh-ling highway bridge over the Liao Ho. Length-1600 ft [redacted] 18 span, deck type.
214	39-56-38N/ 116-46-20E	Yen-chiao-chen highway bridge over the Chien-kan Ho. Length-1300 ft; width-30 ft; concrete deck type.
215	42-17-00N/ 119-01-00E	Highway bridge over the Hsi-lu-k'a Ho at Ch'ih-feng. Length-800 ft; concrete deck type.
216	43-39-00N/ 122-12-00E	Highway bridge over the Hsi-liao Ho at T'ung-liao. Length-840 ft; width-15 ft; 21 steel deck girder spans.

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Target No	Geog. Coords	Name/Description
217	40-50-00N/ 119-48-00E	Highway bridge over the Ta-ling Ho at Chien-ch'ang. Length-1015 ft; width-15 ft; stone deck arch.
218	42-35-55N/ 124-04-35E	Highway bridge over the Ch'ing Ho at K'ai-yuan. Length-850 ft; [redacted] 11 concrete deck-type spans.
219	42-22-00N/ 126-55-00E	Highway bridge. [redacted]
220	43-10-50N/ 126-32-50E	Highway bridge. [redacted]
221	42-59-00N/ 126-47-00E	Highway bridge. Length-865 ft.
222	43-46-40N/ 125-47-30E	Highway bridge. Length-250 ft.
223	43-42-10N/ 125-58-30E	Highway bridge. Length-250 ft.
224	43-55-10N/ 119-30-55E	Highway bridge. Length-450 ft; concrete.
225	43-30-10N/ 118-38-50E	Highway bridge. Length-300 ft; concrete.
226	43-34-00N/ 118-04-00E	Highway bridge. Length-300 ft; concrete.
227	40-42-00N/ 117-09-00E	Highway bridge. Length-1050 ft; concrete.
228	39-41-29N/ 121-44-35E	Highway bridge. Length-350 ft; width-one lane; reinforced concrete.

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Target No	Geogr. Coords	Name/Description
229	43-46-40N/ 125-47-30E	Highway bridge. Length-250 ft.
230	43-31-10N/ 123-32-40E	Highway bridge over the Hsi-liao at Shuang-liao. Length-2000 ft; width-15 ft; concrete deck.
231	42-44-40N/ 130-38-30E	Highway and railroad bridge over the T'u-men River. Length-1970 ft; 23 span, steel deck.
232	42-29-40N/ 130-17-00E	Sinaeon railroad bridge over the Oryong Chon. Length-1970 ft; width-single track; 23 span, steel deck.
233	44-19-55N/ 129-26-55E	Highway bridge over the Mu-tan Chiang at Ning-an. Length-1300 ft; width-20 ft; 37 concrete deck-type spans.
234	43-00-35N/ 129-46-55E	Highway bridge over the Ka-ya at T'u-men. Length-1260 ft; width-25 ft; concrete, deck type.
235	42-57-11N/ 129-51-10E	Highway bridge over the Tumen River at T'u-men. Length-1670 ft; [redacted] 20 concrete deck-type spans.
236	45-10-02N/ 126-44-10E	Highway bridge over the La-lin Ho, 8 miles SW of La-lin. Length-1200 ft; width-20 ft; 19 steel truss spans.
237	43-49-54N/ 126-33-42E	Highway bridge over the Sungari River at Kirin. Length-1180 ft; [redacted] 15 concrete deck-arch and cantilever spans.
238	49-12-30N/ 119-44-55E	Highway bridge. Length-1240 ft.
239	42-53-30N/ 129-30-20E	Highway bridge over the Ha-erh-pa-t'ung Ho at Yen-chi. Length-905 ft; width-[redacted] concrete, deck type.
240	54-03-40N/ 122-51-50E	Highway bridge. Length-300 ft; width-15 ft; 6 span, timber.

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Target No	Geog. Coords	Name/Description
241	49-26-10N/ 127-20-50E	Highway bridge. Length-440 ft.
242	39-25-59N/ 122-06-58E	Highway bridge over the Ta-sha Ho, 3 miles W of Wa-tzu-tien. Length-900 ft; [redacted] 21 deck-type spans.
243	39-46-00N/ 123-05-00E	Highway bridge over the Ying-na, 8 miles NE of Chuang-ho. Length-585 ft; width-15 ft; 9 deck-type spans.
244	39-57-30N/ 123-39-25E	Highway bridge over the Ta-yang Ho, 10 miles NE of Ku-shan. Length-1010 ft; width-20 ft; 12 deck-type spans.
245	49-19-00N/ 129-48-30E	Highway bridge. Length-470 ft.
246	41-18-42N/ 123-46-01E	Highway bridge over the T'ai-tzu Ho at Pen-ch'i. Length-980 ft; width-25 ft; concrete, deck-type.
247	40-06-41N/ 124-23-40E	Highway and railroad bridge over the Yalu River at An-tung. Length-3100 ft; width-10 ft; 12 steel deck truss spans.
248	40-50-15N/ 122-44-40E	Highway bridge over the Sha Ho at Hai-cheng. Length-1150 ft; [redacted] 32 deck-type spans.
249	40-40-00N/ 122-55-00E	Highway bridge over the upper Sha Ho at Kang-yao-ting. Length-700 ft; width-[redacted] 15 deck-type spans.
250	40-17-00N/ 123-17-00E	Highway bridge over the Tung-yang Ho, 2 miles N of Hsiu-yen. Length-670 ft; [redacted] 13 deck-type spans.
251	40-08-35N/ 124-24-11E	Highway bridge over the Ha-ma-t'ang Ho at An-tung. Length-1150 ft; width-[redacted] 19 concrete deck cantilever spans.
252	40-19-28N/ 124-22-16E	Highway bridge over the Ai Ho at Ta-hua. Length-1280 ft; [redacted] 20 spans.

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Target No	Geog. Coords	Name/Description
253	40-27-35N/ 124-57-55E	Supung-dong hydro-electric power plant. Concrete dam . Length-3000 ft; width-30 ft; [redacted] roadway on top of dam.
254	41-55-00N/ 124-23-00E	Highway bridge over the Hun Ho at Han-tsa-nu. Length-725 ft; width-20 ft.
255	41-43-00N/ 125-57-00E	Highway bridge over the Hun Chiang at T'ung-hua. Length-650 ft; width-15 ft; 14 concrete deck cantilever spans.
256	41-47-25N/ 126-54-00E	Highway bridge over the Yalu River at Lan-chiang. Length-1390 ft; width-20 ft; 19 steel deck girder and truss spans.
257	41-43-00N/ 124-47-00E	Highway bridge over the Su-tzu Ho at Yung-ling-chieh. Length-700 ft; width-15 ft; 14 concrete deck arch spans.
258	49-53-51N/ 132-40-26E	Highway bridge. Length-300 ft; reinforced concrete.
259	45-26-50N/ 133-25-20E	Highway and railrpad bridge over the Ussuri River. Length-800 ft; 3 spans, steel truss.
260	45-48-43N/ 126-41-24E	Highway and railroad bridge over the Sungari River at Harbin. Length-3515 ft; width-20 ft roadway on upper deck; 15 steel through-truss spans.
61	47-16-01N/ 123-52-04E	Two highway bridges over the Nen Chiang at Ch'i-ch'i-ha-erh. East bridge-1575 ft long, 20 ft wide, concrete deck; West bridge-990 ft long, 20 ft wide, concrete deck
62	49-15-40N/ 119-43-46E	Highway bridge over the Argun River at Hailar. [redacted] [redacted] ft; 7 steel deck girder and deck cantilever spans.
63	50-20-20N/ 120-16-00E	Highway bridge over the Ken Ho, 10 miles NW of Shang-ku-li. Length-500 ft; [redacted] timber beam deck type.
64	44-35-52N/ 129-38-48E	Highway bridge over the Mu-tan Chiang, 3 miles E of Mu-tan-chiang. Length-[redacted] width-20 ft; 19 steel deck girder and concrete deck cantilever spans.

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Target No	Geog. Coords	Name/Description
265	44-32-00N/ 129-44-00E	Highway bridge over an unnamed stream 5 miles E of Mu-tan-chiang. [redacted] timber deck.
266	44-25-12N/ 130-53-10E	Highway bridge over the Hsiao-sui-fen Ho at Sui-yang. Length-650 ft; width- 20 ft; concrete deck.
267	44-31-00N/ 130-15-00E	Highway bridge over the Mu-leng Ho, 33 miles E of Mu-tan-chiang. Length-650 ft; [redacted] timber deck.
268	46-20-11N/ 132-14-30E	Highway bridge. Length-200 ft; width- 2 lane; reinforced concrete.
269	45-57-00N/ 126-36-00E	Highway bridge over the Hu-lan Ho(S. Channel) at Hu-lan. Length-800 ft; [redacted] concrete deck.
270	46-44-18N/ 126-50-21E	Highway bridge over the Hu-lan Ho at Sui-ha. Length-650 ft; timber deck.
271	49-13-40N/ 119-45-10E	Highway bridge over the I-min Ho at Hailar. Length-1000 ft; width- 40 ft; concrete deck.
272	46-17-55N/ 132-11-41E	Highway bridge. Length-310 ft; width- 2 lane; reinforced concrete.
273	48-00-00N/ 122-43-23E	Highway bridge. Length-400 ft; width-20 ft; reimforced concrete.
274	41-17-10N/ 125-20-20E	Highway bridge over the Hun Ho at Huan-jen. Length-1350 ft; width-20 ft; 20 concrete deck-type spans.
275	44-31-25N/ 127-12-41E	Highway bridge over the Chu-ch'i Ho at Liu-chia-tzu. Length-500 ft.
276	47-28-45N/ 122-02-55E	Highway bridge. Length-920 ft; [redacted] reinforced concrete.

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Target No	Geog. Coords	Name/Description
277	46-04-42N/ 122-05-40E	Highway bridge. Length-350 ft; width-18 ft; reinforced concrete.
278	49-15-40N/ 126-46-10E	Highway bridge. Length-300 ft.
279	48-19-00N/ 122-20-00E	Highway bridge. Length-210 ft.
280	45-31-50N/ 131-57-45E	Highway bridge. Length-575 ft; width-single lane.
281	46-18-50N/ 129-34-50E	Highway bridge. Length-550 ft; width-single lane.
282	44-15-35N/ 130-46-25E	Highway bridge. Length-500 ft; width-single lane.
283	51-54-30N/ 116-38-10E	Highway ferry site. Length-700 ft.
284	51-00-40N/ 116-38-10E	Highway ferry site. Length-800 ft.
285	51-21-00N/ 119-53-00E	Highway ferry site. Length-645 ft.
86	50-16-00N/ 127-34-00E	Blagoveschensk highway ferry over the Zeya River. Length-6400 ft.
87	50-15-30N/ 127-29-00E	Highway ferry site. Length-1500 ft.
88	48-53-10N/ 130-38-20E	Highway ferry site. Length-3800- ft.

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Target No	[redacted]	Geog. Coords	Name/Description
289	[redacted]	49-17-40N/ 129-41-30E	Highway ferry site. Length-2200 ft.
290		49-39-30N/ 129-45-40E	Highway ferry site. Length-1490 ft.
291		48-35-00N/ 135-00-00E	Highway ferry site. Length-9000 ft.
292		51-49-50N/ 126-36-30E	Highway ferry site. Length-760 ft.
293		42-12-00N/ 123-43-00E	Highway bridge over the Ch'ai Ho, 7 miles S of Sun-chia-t'un. Length-1700 ft; [redacted] 18 deck-type spans.
294		42-17-51N/ 123-52-22E	Highway bridge over the Ch'ai Ho at T'ieh-ling. Length-950 ft; [redacted] 12 concrete deck-type spans.
295		41-44-45N/ 123-26-25E	Highway bridge over the Hun Ho at Mukden. Length-2010 ft; width-30 ft; 30 concrete deck cantilever spans.
296		41-35-40N/ 123-24-20E	Highway bridge over the Sha Ho at Chen-hsiang. Length-580 ft; [redacted] 31 concrete deck-type spans.
297		41-16-00N/ 123-12-14E	Highway bridge over the T'ai-tzu Ho at Liao-yang. Length-900 ft; [redacted] 35 concrete deck-type spans.
298		41-09-23N/ 123-01-30E	Highway bridge over the Hsiao-sha Ho at Anshan. Length-500 ft; [redacted] 14 concrete deck-type spans.
299		40-50-58N/ 122-44-00E	Highway bridge over the Sha Ho at Hai-ch'eng. Length-750 ft; [redacted] deck type.
300		43-32-40N/ 131-54-08E	Highway bridge over the Suyfun River .05 mile NW of Razdolnoye. Length-2900 ft; width-25 ft; concrete deck.

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Target No	Geog. Coords	Name/Description
301	43-42-40N/ 131-53-39E	Highway bridge over the Suyfun River 1.5 miles NW of Razdolnoye. [redacted] width-25 ft; concrete deck.
302	43-38-00N/ 131-55-00E	Highway bridge over the Suyfun River 12 miles S of Razdolnoye. [redacted] concrete deck.
303	43-48-00N/ 131-59-00E	Highway bridge over the Rakovka River at Ussuriysk. Length-500 ft; width-20 ft; concrete deck.
304	44-32-00N/ 132-47-00E	Highway bridge over the Kuleshevka River 5.6 miles SSW of Spassk-Dal'niy. Length-2000 ft; concrete deck girder.
305	45-55-58N/ 132-47-00E	Highway bridge over the Vaku River 2 miles E of Iman. Length-1000 ft; width-20 ft; concrete deck.
306	45-57-27N/ 133-47-10E	Two highway bridges separated by a 1600 ft island over the Iman River. Length-550 and 450 ft; width-20 ft; concrete deck.
307	46-46-20N/ 134-17-20E	Highway bridge over the Bikin River. Length-880 ft; width-20 ft; concrete deck.
308	47-51-27N/ 134-58-30E	Highway bridge over the Khor River. Length-1000 ft; width-20 ft; concrete deck.
309	48-47-22N/ 132-55-16E	Highway bridge over the Bolshaya Bira River at Birodibzhan. Length-2100 ft; width-20 ft; concrete deck.
310	40-23-00N/ 122-21-00E	Highway bridge over the Kai-chou Ho at Kai-p'ing. Length-510 ft; [redacted] 12 deck-type spans.
311	50-30-30N/ 127-39-20E	Highway and railroad bridge over the Zeya River 16 miles NW of Berezovka. Length-3750 ft; width-20 ft; steel.
312	50-55-50N/ 128-27-25E	Highway bridge over the Tom River at Belogorsk. Length-680 ft; width-35 ft; concrete deck.

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Target No		Geog. Coords	Name/Description
313		41-44-00N/ 123-16-00E	Highway bridge over the Hun Ho at Ch'ien-mo-chia-p'u. Length-850 ft; [redacted] 6 deck-type spans.
314		43-10-00N/ 131-55-00E	Highway bridge under construction in 1962. Length-2300 ft; concrete.
315		42-43-00N/ 130-38-00E	Highway and railroad bridge at Nagornoye. [redacted] width-10 ft; steel.
316		41-20-02N/ 123-09-05E	Highway bridge over the T'ai-tzu Ho, 5 miles N of Liao-yang. Length-950 ft; [redacted] 26 deck arch spans.
317		45-15-10N/ 133-30-50E	Highway bridge over the Ussuri River 2 miles SE of Tichmenevo. Length-500 ft; width-20 ft; 7 spans, concrete deck.
318		44-32-30N/ 129-35-09E	Highway bridge over the Mu-tan Chiang at Mu-tan-chiang. Length-950 ft; width-20 ft; 9 steel deck girder and cantilever spans.
319		44-25-20N/ 129-30-17E	Highway bridge over the Mu-tan Chiang 7 miles N of Ning-an. Length-700 ft; width-20 ft; concrete deck.
320		44-53-00N/ 131-58-00E	Highway bridge over the Sanitukha River at Il'inka. Length-1000 ft; concrete deck girder.
321		44-02-00N/ 131-24-00E	Highway bridge over the Suyfun River at Novogeorgiyevka. Length-800 ft; wood beam and concrete.

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Telecommunication Targets

Harbin Area

322	[redacted]	45-43-58N/ 126-36-21E	Facility primarily used as a radio broadcasting station but could be used for defense communications.
323		45-41-40N/ 126-49-30E	General purpose, point-to-point radiocommunication station for combined use. Considered a key facility for this area.

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Target No	Geog. Coords	Name/Description
324	45-45-54N/ 126-37-12E	Telephone/Telegraph Central No. 1. Believed to be one of the two main telephone and telegraph centrals serving this area.
325	45-45-27N/ 126-38-21E	Telephone/Telegraph Central No. 2.
326	45-46-49N/ 126-37-57E	Telegraph Central. Facility of secondary importance and used for handling telegraph traffic only. Could be used in connection with railroad operations.
327	45-36-00N/ 126-30-00E	General purpose radiocommunication facility used by the civil MPT or defense authorities. Antennas are located at 45-36-00N/126-30-00E.
Ch'ang-ch'un Area		
328	43-55-32N/ 125-18-21E	General purpose radiocommunication facility.
329	43-52-58N/ 125-19-02E	Radiocommunication facility with telephone and telegraph services available at the same location.
Kirin Area	(Kirin facilities offer alternate routing capabilities in the event Harbin is not operational.	
330	43-50-04N/ 126-33-10E	General purpose, point-to-point radiocommunication station, available for civil and defense use.
331	43-50-24N/ 126-32-50E	Telegraph Central. Facility available for civil or defense services.
332	43-50-20N/ 126-32-58E	Telephone central for all civil or defense use.
Pei-an Area		
333	48-14-18N/ 126-30-00E	Telephone/Telegraph Central. Provides only telephone/telegraph services for civil authorities and for railroad operations. Also a relay terminal.

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Target No	Category Code	B.E. Number	Geog. Coords	Name/Description
Mukden Area	25X1A			
334			41-49-31N/ 123-28-30E	Radiocommunication station No. 1. Station for point-to-point operations, domestic and/or international use.
335			41-47-34N/ 123-27-04E	Radiocommunication station No. 2.
336			41-47-44N/ 123-25-12E	Telephone/Telegragh Central No. 1. One of two main telephone and telegraph centrals for civil and military traffic. Part of the Peiping-Mukden-Harbin primary telecommunications system.
337			41-47-32N/ 123-22-22E	Telephone/Telegraph Central No. 2.
Hailar Ar				
338			49-12-00N/ 119-42-00E	Radiocommunication station. General purpose, civil or military point-to-point radio station. Located on military airfield.

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TERRAIN AND CLIMATE

I. TERRAIN

A. General

This area consist of a 300-mile-wide belt straddling a 1,700-mile section of the boundary between Communist China and the U.S.S.R. with the boundary almost entirely defined by deep, broad rivers. Terrain is comprised of smooth to rugged, mainly forested hills and mountains and flat to rolling, poorly drained, grassy or cultivated lowland plains.

B. Area Description

1. Elevation and Relief

The dominant landforms in the area consist of slightly to severely dissected and generally rounded to flat-topped hills and mountains; the remainder, about 25% of the area, is predominantly plains. Several large ranges in the U.S.S.R. trend north - south or northeast - southwest, but the majority of ranges and individual ridges have no particular pattern. Hill summits commonly are between 1,000 and 1,900 feet above adjoining valley floors, and mountains rise from about 2,200 to more than 4,500 feet above adjacent valley bottoms. The highest mountain peak, (8,661 feet) is in the U.S.S.R. almost 150 miles north of the A mur River. The hills and mountains are separated by many narrow valleys and some large plains, consisting mainly of wide valleys and broad basins. The narrow valleys commonly are well drained, but the plains generally contain large areas of marsh or swamp.

2. Vegetation

The mainly moderate to steep slopes of the hills and mountains are covered by deciduous and evergreen forests with dense underbrush and some grass in places; many of the lower hill slopes are under cultivation. Pastures and croplands are common on better drained parts of the plains. The hill and plain areas adjoining large rivers contain most of the population and transportation facilities in the area. There are discontinuous areas of permafrost mainly at the higher elevations in the hills and mountains of the U.S.S.R. and in the valleys of Communist China north of about 49°N.

3. Ground Operations

Conditions generally are unfavorable for ground operations. The scarcity of railroads and good roads would seriously hamper movement. Most roads are poorly constructed and would not sustain heavy military traffic; washouts, landslides, muddy or frozen surfaces, steep grades, sharp curves, fords, and low-capacity bridges are common. In most places dispersal from the roads would be obstructed by steep slopes, wet ground in valleys and basins, or dense forest. Construction of additional roads would be difficult in most of the area since alinements would be restricted and extensive cutting and filling, some tunneling and much drilling and blasting would be required; in addition, areas of permafrost present special engineering problems. Cross-country movement of foot troops and vehicles would be severely restricted in most of the area by steep slopes, wide and deep rivers, wet ground, and dense forests. Conditions for cross-country movement are best in the wider valleys and basins during the winter when drainage features are deeply frozen. Extremely cold winter temperatures and accumulations of snow, however, would hamper many activities. Concealment generally would be available in the extensively forested sectors; summer, when deciduous trees are in foliage, is the best period for concealment from both air and ground observation. Cover for troops would be afforded mainly by numerous surface irregularities in the hills and mountains. Little of the area is suitable for the construction of bunkers for additional cover and concealment; tunnel sites are most numerous in the U.S.S.R. and the northeastern part of Communist China, but access to most sites would be difficult and unstable rock is common in the U.S.S.R. sector. Former Japanese fortifications in the Communist Chinese part of the area probably were destroyed by the U.S.S.R. after World War II; in the U.S.S.R. sector there are a few forts that were built before World War II.

4. Airborne Operations

Conditions also are generally unfavorable for airborne operations. Parachute and assault-type aircraft operations would be exceedingly difficult in the hills and mountains because of the moderate to steep slopes and dense

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forests. Drops and landings would be more feasible in the plain sectors. Even there, however, air approaches would be hindered by the bordering hills and mountains, and potential airdrops and airlanding sites are limited in number and size by the presence of many marshes and swamps. There are few sites suitable for the construction of airfields on the plains because of poor foundations and the presence of numerous marshes, swamps, and areas subject to inundation. In addition to the problem imposed by poor drainage, extensive excavation, filling, and tree clearing would be required, and the hills and mountains severely restrict the orientation of runways and air approaches.

II. CLIMATE

A. General

This study considers climatic conditions in the area extending 250 miles on either side of the Sino-Soviet border from the North Korean boundary in the southeast to the mongolian boundary in the northwest.

There are four seasons in this area:

Northwest Monsoon-October through mid-April
Spring transition-Mid-April through June
South Monsoon-July and August
Autumn transition-September

Weather conditions are controlled by two air flow patterns, the northwest and south monsoons. Day to day variations are caused by migratory lows which tend to skirt the coast in winter and reach the interior in summer.

B. Seasonal Variations and their effects on Ground and Air Operations.

1. Northwest monsoon (October through mid-April). The northwest monsoon is characterized by a continuing flow of cold air from the continental interior. Skies are frequently clear and the precipitation light and mostly in the form of snow. Low-pressure systems moving northward along the coast periodically cause extensive cloudiness to spread over the interior. The first snowfalls usually occur in late September or early October and the last in late April or early May. Precipitation is light, with monthly averages generally less than 0.5 inch, with snow recorded on 25 to 50 days per winter. The ground remains snow covered much

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of the time in November through March; the depth, however, is generally less than 8 inches. December, January, and February are the coldest months, with daily temperatures in the northern mountains ranging from 40°F; the central and southern lowlands are warmer with minimums mostly 0°F to -20°F and maximums 25°F to 5°F.

a. Weather conditions are generally favorable for ground operations at the beginning and ending of the northwest monsoon; during midseason, however, extremely low temperatures and the accumulation of snow present difficulties.

b. Weather conditions are frequently favorable for air operations during this period, particularly over the interior. The extreme southeastern portion is occasionally affected by lows which skirt the coast, causing low clouds and snow to spread over the interior. Icing hazards and turbulent air conditions may also accompany the frontal system of these lows. Aircraft icing is therefore more likely to be encountered in the southern portion, particularly at the beginning and end of the season. The prevailing airflow aloft is from the west and west-northwest during the northwest monsoon, with average speeds highest from November through February when they increase from 20 to 25 knots at 10,000 feet to as high as 80 or 90 knots over southern portions of the area at 35,000 feet. Over northern portions the average speed at this level is much less, about 40 to 50 knots. These high speeds are associated with the jet stream near the tropopause level.

2. Spring intermonsoon season (mid-April through June). This season is a period of increasing cloudiness and rainfall, with an average monthly precipitation of 1 to 4 inches. Average early-morning temperatures are frequently below freezing in late April especially in the north, while in June afternoon averages reach 70°F. except in the northern portions.

a. Periods of weather favorable for ground operations are not uncommon. Unfavorable conditions are generally associated with the migratory lows which in this season penetrate the interior.

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b. During this season coastal lows occasionally penetrate the interior, bringing low clouds and increasing the danger of aircraft icing. The average cloudiness increases from 50% to 60% in April to 60% to 75% in June and the number of thunderstorms days increases from 1 or 2 in May to 3 to 6 in June. There are on the average 2 to 4 clear days in the Chinese sector and 6 to 9 in the Siberian sector. Conditions favorable for air operations tend to decrease during this season.

3. South monsoon (July and August): During this season warm moist air from the subtropics brings generally overcast skies with frequent showers and thunderstorms. On rare occasions an extratropical storm or typhoon will cause strong winds and heavy rain in a limited area near the coast. Precipitation is heavier in the southeast, with monthly averages 4 to 7 inches; over the northern portion averages lie between 3 and 5 inches. Thunderstorms occur on 2 to 6 days per month at most locations, but occur as often as 8 per month in the eastern portion.

a. Transport and other surface operations are periodically curtailed by the showers, which in southeastern most portions cause both flash floods and general flooding. These conditions, in conjunction with the high morning humidities and the heat of midday, present problems in the portection and storage of supplies.

b. During this season southward-facing slopes of the mountains as well as the ridges are frequently obscured by clouds which extend at times to 30,000 feet. Turbulent air conditions and icing are present in the towering cumulus clouds associated with thunderstorms which develop on 2 to 6 days per month in most areas. The average height of the freezing level, above which the icing hazard occurs, is close to 16,000 feet. The upper-air flow is principally from the west with average speeds increasing from 5 knots at 5,000 feet to 30 or 35 knots between 25,000 feet and 45,000 feet.

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4. Autumn intermonsoon (September): This month marks the transition between the rainy summer and the dry winter. Precipitation averages decrease from the July and August wet period, averaging about 2 to 3 inches. Temperatures also drop sharply, occasionally reaching the freezing point toward the end of September, especially in the northern portion of the area.

a. Conditions favorable for ground operations increase in frequency during this month.

b. During this month, the number of days favorable for air operations also increase. The most pronounced change is in shower and thunderstorm activity which decreases significantly. There is also a drop in the average cloudiness of about 10% to 15% with a corresponding increase in the number of clear days. The airflow aloft is principally from the west; average speeds increasing from 5 knots at 5,000 feet to 30 to 60 knots above 15,000 feet, the higher speeds occurring over southern portions.

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Approved For Release 2005/06/08 : CIA-RDP78T05439A000400210036-9

DEPOTS IN NORTHEAST CHINA

The following list shows the significant known depot areas in the portion of China adjacent to the Northeast Sino-Soviet Frontier. While some entries represent a single supply installation, in many cases the listed item represents a supply complex consisting of two or more depots in close proximity.

GENERAL SUPPLY

1.	Peiping	3949N, 11628E
		3951N, 11612E
		3951N, 11617E
2.	Tien-ching	3905N, 11715E
		3914N, 11709E
3.	T'ang-ku	3900N, 11755E
4.	Ch'ang-li	3942N, 11908W
5.	Chin-chou	4111N, 12123E
6.	Lu-shun	3849N, 12115E
		3845N, 12111E
7.	Ta-lien	3857N, 12153E
		3853N, 12131E
8.	Chin-hsien	3906N, 12143E
9.	Chuang-ho	3945N, 12257E
		3946N, 12257E
10.	Hsiu-yen	4017N, 12317E
11.	An-tung	4008N, 12424E
12.	Shen-yang	4144N, 12529E
		4149N, 12530E
		4156N, 12550E
		4208N, 12557E
		4150N, 12522E
13.	An-shan	4157N, 12530E
14.	K'ai-yuan	4257N, 12405E
15.	Ssu-p'ing	4309N, 12422E
		4315N, 12441E
16.	Ch'ang-ch'un	4355N, 12519E
17	Chan-nan-ling	4409N, 12526E
18.	Chiu-t'ai	4407N, 12603E
19.	Wei-ching	4246N, 12517E
20.	Hua-tien	4257N, 12648E
21.	Chi-lin	4349N, 12631E
22.	T'ao-an	4538N, 12248E
		4542N, 12238E
23.	Hu-lan	4600N, 12639E
24.	Ha-erh-pin	4546N, 12645E
25.	Mu-tan-chiang	4434N, 12935E
26.	Ch'i-ch'i-ha-erh	4718N, 12355E
		4720N, 12359E
27.	Fu-la-erh-chi	4714N, 12340E
28.	Chu-chia-kang	4720N, 12310E
29.	Cha-tai-no-erh	4920N, 11741E

AMMUNITION STORAGE

1.	Peiping	4000N, 11615E
2.	Tien-ching	3914N, 11709E
3.	I-hsien	4131N, 12114E
4.	Lu-shun	3855N, 12120E
5.	Ta-lien	3859N, 12133E
6.	Chin-hsien	3907N, 12145E
7.	Fu-hsien	3940N, 12206E
8.	Kao-li-men	4022N, 12405E
9.	Feng-ch'eng	4043N, 12358E
10.	Fu-shun	4154N, 12346E
11.	T'ung-hua	4149N, 12549E
12.	Shen-yang	4210N, 12346E
13.	T'ieh-ling	4207N, 12343E
14.	Ssu-p'ing	4306N, 12439E
15.	Liao-yuan	4334N, 12334E
16.	Ping-kang-chen	4259N, 12447E
17.	Ch'ang'ch'un	4350N, 12513E
18.	Tun-hua	4319N, 12804E
19.	Mu-tan-chiang	4435N, 12939E
20.	Lin-k'ou	4517N, 13015E
21.	Shih-men-tzu	4357N, 13104E
22.	Yang-shu-ho-tzu	4545N, 13223E
23.	P'o-li	4544N, 13031E
24.	Ha-erh-pin	4542N, 12641E
25.	Wang-yeh-miao	4601N, 12202E
26.	T'ao-an	4544N, 12259E
27.	Nien-tzu-shan	4731N, 12254E
28.	Ta-lu	4804N, 12245E
29.	Fu-la-erh-chi	4714N, 12335E
30.	Ch'i-ch'i-ha-erh	4722N, 12358E
31.	Pei-an	4815N, 12630E
32.	Hsing-shan-chen	4721N, 13017E
33.	Chia-mu-ssu	4647N, 13022E

ORDNANCE

1.	Peiping	3956N, 11625E
		3954N, 11621E
2.	An-tung	4011N, 12421E
3.	Shen-yang	4149N, 12319E
		4153N, 12327E
		4147N, 12322E
4.	T'ieh-ling	4217N, 12350E
5.	T'ao-an	4543N, 12259E
6.	Mu-tan-chiang	4435N, 12936E
7.	Lu-shun	3847N, 12114E
8.	Ch'i-ch'i-ha-erh	4722N, 12357E

POL

1.	Kao-pei-tien-chen	3918N, 11551E
2.	Hsin-pao-an	4027N, 11520E
3.	T'ien-ching	3907N, 11713E
4.	Peiping	3948N, 11610E
5.	Ts'ang-hsien	3818N, 11652E
6.	T'ang-ku	3901N, 11736E
8.	Chin-chou	4108N, 12106E
9.	Hu-lu-tao	4043N, 12059E
10.	Ying-k'ou	4043N, 12215E
11.	Lien-shan	4044N, 12050E
12.	Lu-shun	3848N, 12116E

13.	Ta-lien	3858N, 12139E
14.	Fu-shun	4151N, 12353E
15.	Shen-yang	4153N, 12328E
16.	T'ieh-ling	4216N, 12350E
17.	Sun-chia-tai	4225N, 12401E
18.	Ssu-ping	4311N, 12425E
19.	Sui-fen-ho	4422N, 13109E
20.	Ha-erh-pin	4548N, 12641E
21.	T'ao-an	4538N, 12252E
22.	Chia-mu-ssu	4650N, 13018E
23.	Shu-erh-tu	4638N, 12454E
24.	Fu-la-erh-chi	4714N, 12337E
25.	Erh-shi-ssu	4727N, 12259E
26.	Chu=chia-kang	4727N, 12301E

APPENDIX F
to TAB F

TELECOMMUNICATIONS FACILITIES

Telecommunications facilities serving the northeast area of Communist China generally follow the same pattern as those serving the urban centers of Mukden, Ch'ang-ch'un, Harbin, Hailar, and Mu-tan-chiang. The primary telecommunication system consists of carrier-equipped open-wire lines, multi-conductor cables and radiocommunication stations. The secondary system depends mainly on open-wire lines and radiocommunications serving the interior. As in other areas of China the armed forces operate and maintain a separate telecommunications system parallel to the civilian network. The telecommunications system in northeast China is less extensive than the Peiping-Mukden facilities, and consequently has a reduced transmission capability.

Telecommunications facilities available for civil, defense and public use in the key urban areas are automatic, while the remote interior regions are served by manual equipment. The public's needs are usually of secondary importance. Telecommunications construction and expansion is believed to have kept pace with civil and defense requirements along the Mukden-Harbin-Hailar-Mu-tan-chiang axis. The less developed interior regions are served mainly by newly constructed open wire lines, some of which are carrier-equipped and provide basic telephone and telegraph services. Telephone, telegraph, telephoto and teleprinter are available over the primary system and, to a lesser degree, over the secondary system.

APPENDIX G
TO TAB F

GAZETTEER

PLACE NAMES AND LOCATIONS

Place Names	Geographic Coordinates (North/East)
A-ch'eng	45 32/126 59
A-erh-t'an-o-lo-mo (Hsinpaerhhu)	48 40/116 50
Ai-hun (Hei-ho)	50 16/127 28
Akuray	50 46/117 11
Amurzet	47 42/131-05
*An-lo-cheng	45 47/133 00
An-shan	41 07/122 57
An-ta	46 24/125 19
An-tung	40 08/124 24
Arkhara	49 26/130 04
Artem	43 22/132 11
Bara bash	43 12/131 29
Belogarsk	50 55/128 28
Bidzhan	47 58/131 56
Bikin	46 48/134 16
Birofeld	48 26/132 49
Birobidzhan	48 48/132 57
Blagoveshchensk	50 16/127 32
Borzya	50 23/116 34
Ch'ang-ch'un	43 52/125 21
Ch'ang-pai	41 26/128 11
Ch'ang-pei	41 10/114 45
Ch'ao-yang-chen	48 55/130 25
Cheng-chou (Cheng-hsien)	34 45/113 40
Cheng-hsien (Cheng-chou)	34 45/113 40
Ch'eng-te	40 58/117 53
Ch'eng-tu	30 40/104 04
Ch'en-kuo-ch'i	45 08/124 48
Chia-mu-ssu	46 50/130 21
Chi-an	41 06/126 10
*Chian-na-chin-t'un	48 07/123 30
Ch'i-ch'i-ha-erh (Tsitsihar)	47 22/123 57
Chieh-ching-k'ou	47 56/132 50
*Chien-an	45 00/124 07
*Ch'ien-kuo-erh-lo-ssu	45 08/124 48
*Chi-erh-ch'in	46 16 132/41
Ch'i-feng	42 17/115 53
*Chi-hsi	45 18/130 58
*Chi-hsien	46 43/131 08
Chi-i	approx 45 32/131 59
*Ch'i-k'a	49 35/128 27
Chi-la-lin (Shih-wei)	51 20/119 54
Chi-lin (Kirin)	43 51/126 33
Chi-nan (Tsinan)	36 40/117 00
Chin-chou	41 07/121 06

* Not in NIS Gazetteer

Place Names	Geographic Coordinates (North/East)
Ch'ing-kang	46 41/126 05
Chin-hsien	39 06/121 43
*Chin-shan-chen	51 53/126 30
Chita	52 03/113 30
Chiu-pei-lo-fu	45 39/118 39
*Chiu-shih-wu-kung-li	43 22/130 30
*Chiu-sha-p'ing	42 34/130 32
Chu-chia-kang	47 20/123 12
Dairen (Ta-lien)	38 55/121 39
Dosatuy	50 23/118 38
Dzhalinda	53 29/123 54
Erh-shi-li-lo	49 27/126 08
Erh-shi-ssu	47 26/122 59
Fa-k'u	42 30/123 24
Fang-ch'eng	45 50/128 48
Feng-ch'eng	40 27/124 02
Fu-chou (Fu-Hsien)	39 44/121 44
Fu-hsien (Fu-chou)	39 41/121 44
Fu-la-erh-chi	47 15/123 40
Fu-shun	41 52/123 53
Fu-sung	42 17/127 19
Fu-yuan	48 21/134 18
Grafskiy	45 57/134 41
Ha-erh-pin (Harbin)	45 45/126 39
Hai-ch'eng	40 52/122 45
Hailar (Hai-la-erh)	49 12/119 42
Hai-la-erh (Hailar)	49 12/119 42
Hai-lung	42 39/125 49
Hanka Lake	45 00/132 24
Han-te-lo	47 23/119 24
Harbin (Ha-erh-pin)	45 45/126 39
Hei-ho (Ai-hun)	50 16/127 28
*Ho-lung	42 31/128 59
*Hou-ch'un	approx 45 24/131 52
Hsia-k'u-li	approx 50 20/120 20
Hsi-kuei-t'u-ch'i (Ya-k'o-shih)	49 17/120 44
*Hsi-lin-hao-t'e	43 58/116 02
* Hsin-chan-chieh	43 52/127 20
*Hsing-lung-ti	42 50/120 44
Hsing-shan-chen	47 24/130 22
Hsin-min	42 00/122 48
Hsin-ming (Hua-te)	41 57/114 04
Hsinpaerhhu (A-erh-t'an-o-mo-lo)	48 40/116 50

*Not in NIS Gazetteer

Place Names	Geographic Coordinates (North/East)
Hsiung-yueh	40 10/122 48
Huai-te	43 30/124 49
Huan-jen	41 16/125 21
Hua-te (Hsin-ming)	41 57/114 04
Hu-lan	45 59/126 36
Hu-lin (Hou-t'ou)	45 58/133 38
Hu-lun (Hai-la-erh)	49 12/119 42
Hu-lu-tao	40 43/121 00
Hun-ch'un	45 52/130 21
Hu-t'ou (Hu-lin)	45 58/133 38
*I-ch'un	47 42/128 54
I-erh-shih	24 14/119 59
Ignashino	53 28/122 22
I-hsien	41 32/121 15
Iman	45 55/133 45
Innokentyevka	49 18/129 42
Jao-ho	46 47/134 00
K'ai-feng	34 51/114 21
Kai-p'ing	40 24/122 20
K'ai-yuan	42 32/124 01
Kan-chu-miao	48 22/118 07
Khabarovsk	48 30/135 06
Kirin (Chi-lin)	43 51/126 33
Kraskino	42 43/130 48
K'uan-tien	40 47/124 43
K'un-ming	25 04/102 41
Ku-shan	39 53/123 26
La-lin	45 14/126 50
Lao-lang-pu	42 07/128 13
Leninskoye	47 56/132 38
Liao-yang	41 17/123 11
Liao-yuan (Shuang-liao)	43 30/123 29
Lien-shan	40 45/120 50
Lin-chiang	41 44/126 55
Lin-hsi	43 31/118 02
Lin-k'ou	45 18/130 17
Lin-tung	43 59/119 11
Lin-yu	40 01/119 44
Li-shu-chen	45 05/130 40
*Lo-pei	47 35/130 50
Lung-chen	48 40/126 43
Lu-pin (Man-chou-li)	49 36/117 26
Lu-shun (Port Arthur)	34 48/121 16

* Not in NIS Gazetteer

Place Names		Geographic Coordinates (North/East)
Man-chou-li (Lu-pin)		49 36/117 26
Mao-lin		43 58/123 24
Ma-t'ou-liang-tzu		42 10/125 55
Meng-tzu		23 27/103 24
Miao-hsi-kou		23 22/103 24
Mien-tu-ho		49 06/121 02
Mikhaylovka		43 56/132 00
Min-yun		40 22/116 49
Mogoytuy		51 17/114 55
Mo-ho		53 28/122 17
Mukden (Shen-yang)		41 48/123 27
Mukhino		52 16/127 13
Mu-leng		44 56/130 32
Mu-tan-chiang		44 35/129 36
Nagornaya (Nagornoye)		42 25/130 39
Nakhodka		42 48/132 13
Nan-ch'a		47 08/129 16
Nan-p'ing		42 16/129 13
Nen-ch'eng (Nen-chiang)		49 11/125 13
Nen-chiang (Nen-ch'eng)		49 11/125 13
Nerchinsk		51 58/116 35
Nerchinsky Zavod		51 19/119 36
Nien-tzu-shan		47 31/122 53
No-ho		48 29/124 50
Novotroitskaya		50 30/127 34
Nung-an		44 26/125 11
Olochi		51 21/119 55
Ou-p'u		52 47/126 04
Pai-ch'eng (T'ao-an)		45 37/122 49
Pa-lin-tso-I-ch'i (Lin-tung)		43 59/119 11
P'ang-chiang		42 50/118 01
Pao-ch'ing		46 20/132 12
Pao-t'ou		40 36/110 03
Pashkovo		48 53/130 35
Pei-an		48 16/126 3[illegible]
Pei-p'iao		41 48/120 44
Pei-shan-ch'eng-chen (Shan-ch'eng-tzu)		42 22/125 2[illegible]
P'ing-yang	approx	45 11/131 13
Peiping		39 56/116 24
P'o-li		45 46/130 31
Port Arthur (Lu-shun)		38 48/121 16
Poyarkovo		49 36/128 41
Pu-hsi		46 29/124 49
P'u-lan-tien		39 25/121 59
*Pu-ta-yuan-erh		40 56/125 19
Pu-t'e-ha-ch'i (Ya-lu)		48 00/122 43

* Not in NIS Gazetteer

Place Names	Geographic Coordinates (North/East)
*Satenda	42 46/130 23
Sagitovo	48 55/130 24
San-ch'a-k'ou (Tung-ning)	44 01/131 14
*San-ho	42 27/129 44
Sha-ch'eng	40 25/115 27
Sha-erh-t'u	46 35/125 00
Shan-ch'eng-tzu (Pei-shan-ch'eng-chen)	42 22/125 26
Shanghai	31 14/121 28
*Shang-ho-k'ou	40 25/124 49
Shangi-ko-p'u	42 03/128 17
*Sha-t'o tzu	42 48/130 16
Shen-yang (Mukden)	41 48/123 27
Shih-men-tzu	48 33/121 36
*Shih-pa-chan	52 25/125 26
Shih-wei (Chi-la-lin)	51 20/119 54
Shuang-liao (Liao-yuan)	43 30/123 29
Skovorodino	53 59/123 55
Sretensk	52 15/117 43
Ssu-p'ing	43 10/124 20
Staro-tsurukhay tuy	50 12/119 20
Sui-chung	40 21/120 21
Sui-fen-ho (Suifun)	44 20/131 10
Sung-chan (Wu-li-mu)	46 15/125 40
Sun-wu	49 25/127 21
Suifun (Sui-fen-ho)	44 20/131 10
Svobodnyy	51 24/128 08
Ta-chiang-kang	42 39/127 17
Ta-ch'ing-kou	45 14/123 08
T'ai-lai	46 23/123 24
T'ai-yuan	37 52/112 33
*Ta-la-tzu	51 45/126 05
Ta-lien (Dairen)	38 55/121 39
T'ang-ku	39 01/117 40
Tang-wang-Ho	48 25/129 34
T'ao-an (T'ao-nan)	45 20/122 47
T'ao-an (Pai-ch'eng)	45 37/122 49
*Tao-ho	44 03/130 49
T'ao-nan (T'ao-an)	45 20/122 47
T'ieh-ling	42 18/123 49
T'ien-ching (Tientsen)	39 08/117 12
Tientsen (T'ien-ching)	39 08/117 12
T'ou-chan	49 20/119 40
Ts'ao-ho-kou	40 54/123 53
Tsinan (Chi-nan)	36 40/117 00
Tsingtao	36 04/120 19
Tsitsihar (Ch'i-ch'i-ha-erh)	47 22/123 57
T'u-men	42 58/129 49
T'ung-chiang	47 40/132 30
Tung-hai	34 34/119 08
Tung-hsing chen	43 13/131 05
T'ung-hua	41 41/125 55
T'ung-liao	43 37/122 16

* Not in NIS Gazetteer

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Place Names	Geographic Coordinates (North/East)
Tung-ning (San-ch'a-k'ou)	44 01/131 14
Tun-hua	43 21/128 13
Turiy Rog	45 14/131 58
Tygda	53 07/126 17
Unbong-dong (Unbong-ni)	41 22/126 32
Urusha	54 04/122 52
Ushakovo	51 50/126 35
Ussuriysk	43 48/131 59
Ust'oron	51 42/115 47
Vasilevskaya	46 51/134 03
Vladivostok	43 08/131 54
Wang-yeh-miao (Wu-lan-hao-t'e)	46 05/122 05
Wen-ch'uan	47 13/119 59
*Wu-chai	46 50/125 38
Wu-lan-hao-t'e (Wang-yeh-miao)	46 05/122 05
Wu-li-mu (Sung-chan)	46 15/125 40
*Wu-t'ung-chen	47 31/130 29
*Wu-ying	49 12/127 10
Wu-yun	49 17/129 40
Ya-k'O-shih (Hsi-kuei-t'u-ch'i)	49 17/120 44
Ya-lu (Pu-t'e-ha-ch'i)	48 00/122 43
Yang-mu-kang	45 42/132 17
*Yang-shu-ho-tzu	45 40/132 17
Yen-chi	42 53/129 31
Zabaykal'sk	49 38/117 19
Zavitinsk	50 07/129 26

* Not in NIS Gazetteer